

CITY OF LEON VALLEY, TEXAS



# FY 2012 WATER AND SEWER PROJECTS

BID # 2012-02

MAYOR  
CHRIS RILEY

CITY MANAGER  
MANNY LONGORIA

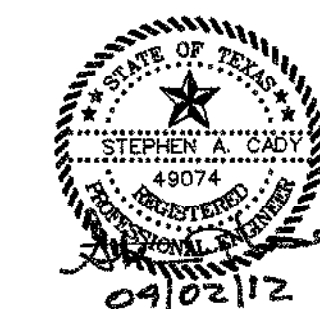
CITY COUNCIL  
IRENE BALDRIDGE  
ART REYNA  
PAUL BIEVER  
JACK DEAN  
KATHY HILL

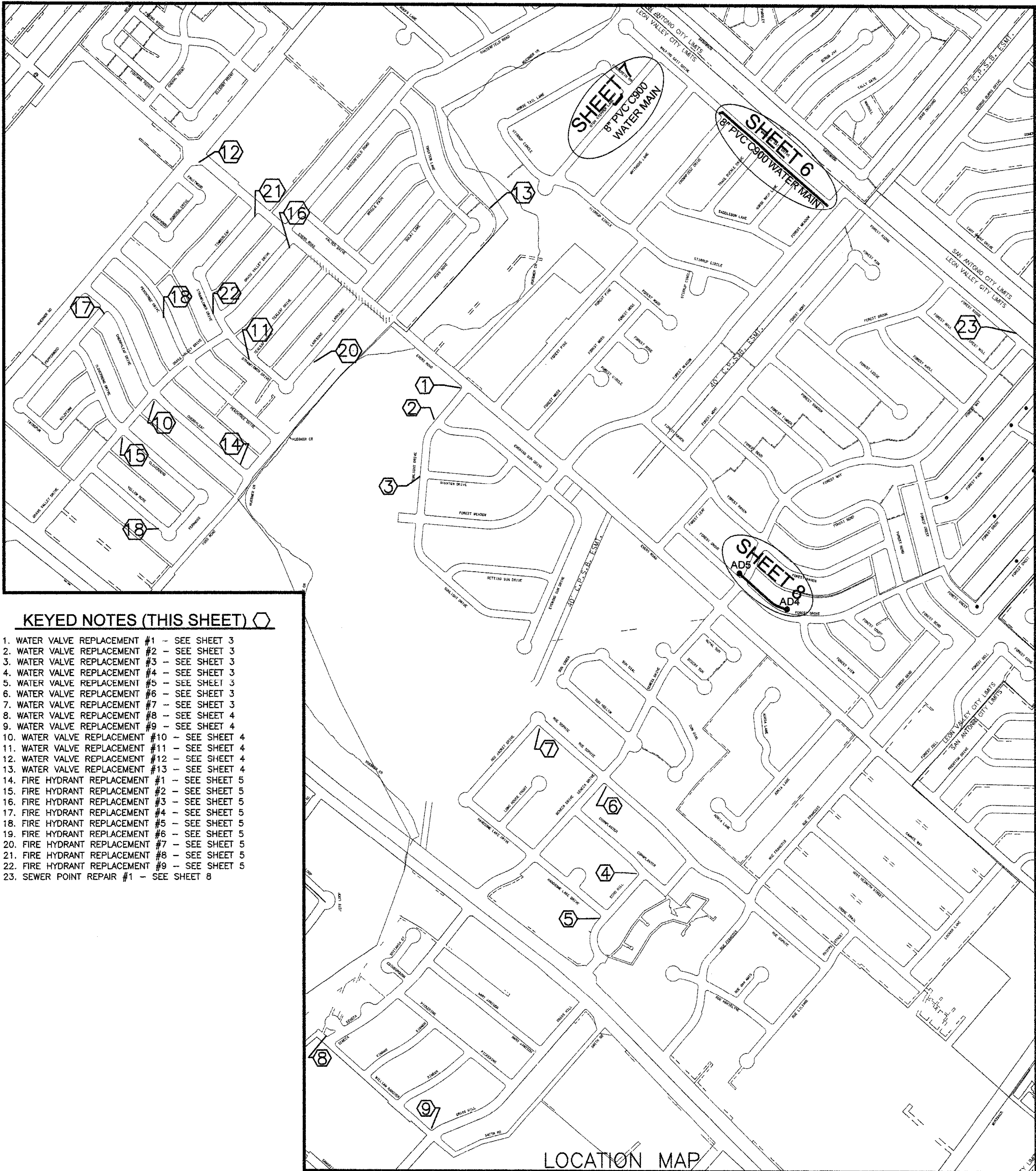
DIRECTOR OF PUBLIC WORKS  
BYRON VICK

APRIL 2012

**SA** San Antonio  
**DG** Design Group Inc.  
**INC** CONSULTING ENGINEERS  
2101 LOCKHILL SELMA SUITE 216 SAN ANTONIO, TEXAS 78213  
PH: (210) 342-6700 FAX: (210) 342-6701

INDEX OF SHEETS	
DESCRIPTION	SHEET NO.
COVER SHEET	1
INDEX MAP & GENERAL NOTES	2
WATER VALVE REPLACEMENT #1 THRU #7	3
WATER VALVE REPLACEMENT #8 THRU #14	4
FIRE HYDRANT REPLACEMENT #1 THRU #9	5
WATER MAIN REPLACEMENT WALKING GAIT	6
WATER MAIN REPLACEMENT HIGH STEPPER	7
FOREST GROVE SAN. SEW. & SS POINT REPAIR #1	8
DETAILS	9-10



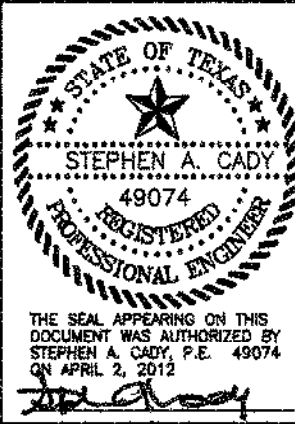


### KEYED NOTES (THIS SHEET)

1. WATER VALVE REPLACEMENT #1 - SEE SHEET 3
2. WATER VALVE REPLACEMENT #2 - SEE SHEET 3
3. WATER VALVE REPLACEMENT #3 - SEE SHEET 3
4. WATER VALVE REPLACEMENT #4 - SEE SHEET 3
5. WATER VALVE REPLACEMENT #5 - SEE SHEET 3
6. WATER VALVE REPLACEMENT #6 - SEE SHEET 3
7. WATER VALVE REPLACEMENT #7 - SEE SHEET 3
8. WATER VALVE REPLACEMENT #8 - SEE SHEET 3
9. WATER VALVE REPLACEMENT #9 - SEE SHEET 4
10. WATER VALVE REPLACEMENT #10 - SEE SHEET 4
11. WATER VALVE REPLACEMENT #11 - SEE SHEET 4
12. WATER VALVE REPLACEMENT #12 - SEE SHEET 4
13. WATER VALVE REPLACEMENT #13 - SEE SHEET 4
14. FIRE HYDRANT REPLACEMENT #1 - SEE SHEET 5
15. FIRE HYDRANT REPLACEMENT #2 - SEE SHEET 5
16. FIRE HYDRANT REPLACEMENT #3 - SEE SHEET 5
17. FIRE HYDRANT REPLACEMENT #4 - SEE SHEET 5
18. FIRE HYDRANT REPLACEMENT #5 - SEE SHEET 5
19. FIRE HYDRANT REPLACEMENT #6 - SEE SHEET 5
20. FIRE HYDRANT REPLACEMENT #7 - SEE SHEET 5
21. FIRE HYDRANT REPLACEMENT #8 - SEE SHEET 5
22. FIRE HYDRANT REPLACEMENT #9 - SEE SHEET 5
23. SEWER POINT REPAIR #1 - SEE SHEET 8

### GENERAL NOTES

1. TEN (10) DAYS PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL ARRANGE WITH THE CITY FOR A PRECONSTRUCTION CONFERENCE TO BE HELD AT THE CITY AND SHALL THEREAFTER SECURE A CITY PERMIT.
2. THIS WORK WILL BE INSPECTED BY THE CITY AND ALL CHANGE ORDER COMMUNICATIONS CONCERNING THE WORK SHALL BE DIRECTED TO THE CITY.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL SIGNS AND BARRICADES ARE PROPERLY INSTALLED AND MAINTAINED. ALL LOCATIONS AND DISTANCES FOR PLACEMENT WILL BE DECIDED UPON IN THE FIELD BY THE CONTRACTOR, USING THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE CITY'S CONSTRUCTION INSPECTOR AND THE TRAFFIC ENGINEERING REPRESENTATIVE WILL ONLY BE RESPONSIBLE TO INSPECT BARRICADES AND SIGNS. IF IN THE OPINION OF THE TRAFFIC ENGINEER REPRESENTATIVE AND THE CONSTRUCTION INSPECTOR, THE SIGNS AND BARRICADES DO NOT CONFORM TO THE ESTABLISHED STANDARDS OR ARE IMPROPERLY PLACED OR ARE INSUFFICIENT IN QUANTITY TO PROTECT THE GENERAL PUBLIC, THE CONSTRUCTION INSPECTOR SHALL HAVE THE OPTION TO STOP OPERATIONS UNTIL SUCH TIME AS CONDITIONS ARE CORRECTED.
4. CONTRACTOR SHALL MAINTAIN ACCESS TO RESIDENTIAL DRIVEWAYS DURING CONSTRUCTION. HOMEOWNERS SHALL BE NOTIFIED BY THE CONTRACTOR 24 HOURS IN ADVANCE OF BLOCKING DRIVEWAYS. ALL DRIVEWAYS SHALL REMAIN OPEN ON WEEKDAYS AND WEEKENDS.
5. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, ACCESS TO GAS VALVES MUST BE MAINTAINED AT ALL TIMES. CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
6. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION TO DETERMINE THE LOCATION OF EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING AT LEAST 48 HOURS PRIOR TO EXCAVATING OPERATIONS.  
TEXAS STATE WIDE ONE CALL LOCATOR: 1-800-344-8377  
- CITY PUBLIC SERVICE  
- TIME WARNER CABLE  
- SOUTHWESTERN BELL TELEPHONE  
SAN ANTONIO WATER SYSTEM 704-7107/7109  
LEON VALLEY WATER SYSTEM LOCATOR 210-681-1232  
GREY FOREST GAS 800-545-6005
7. WHEN SEWER LINES ARE INSTALLED IN THE VICINITY OF WATER MAINS, SUCH INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS" (1988 OR ANY REVISIONS THERETO). (NO SEPARATE PAY ITEM).
8. THE CONTRACTOR SHALL PROTECT EXISTING SANITARY SEWERS UNTIL ABANDONED.
9. THE CONTRACTOR SHALL PLACE THE PROPOSED LINE IN THE SAME TRENCH AS EXISTING LINE WHERE SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS FLOWS AND RECONNECTING EXISTING SERVICES, INCLUDING VERTICAL STACKS, AS THE PIPE IS BEING LAID.
10. THE RINGS AND COVERS SHALL BE SALVAGED ON ALL MANHOLES TO BE ABANDONED OR REMOVED.
11. PASSAGE OF AN APPROVED GO-NO-GO DEFLECTION TESTING MANDREL SHALL BE REQUIRED FOR FINAL ACCEPTANCE OF FLEXIBLE CONDUIT OVER 50 FEET IN LENGTH. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION FIVE PERCENT (5%). IF THE DEFLECTION TEST IS TO BE RUN USING A RIGID BALL OR MANDREL, IT SHALL HAVE A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. THE TEST SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES.
12. ALL MANHOLES, RINGS, AND COVERS SHALL BE WATER TIGHT IN ACCORDANCE WITH ITEM "SANITARY SEWER MANHOLES", IN THE TECHNICAL PROVISIONS.
13. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT NO OVERFLOWS OR SPILLAGE OF SEWAGE OCCURS DURING CONSTRUCTION. THIS INCLUDES RAW SEWAGE IN THE TRENCHES. SHOULD THIS OCCUR, THE CONTRACTOR SHALL:
  - A. IDENTIFY THE SOURCE OF THE SPILL AND ATTEMPT TO ELIMINATE ANY ADDITIONAL SPILLAGE. NOTIFY THE INSPECTOR.
  - B. CONTAIN THE SPILL IN PLACE AND AVOID CONTAMINATION OF STREAMS.
  - C. CLEAN UP THE SPILL AND DISPOSE OF CONTAMINATED MATERIALS.
  - D. DISINFECT THE AREA OF THE SPILL WITH A MIXTURE OF 10% CHLORINE AND WATER.
  - E. IDENTIFY AND TRAIN PERSONNEL RESPONSIBLE FOR SPILL PREVENTION AND CONTROL.
14. LOCATION AND DEPTH OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS REFLECTED IN VISIBLE SURFACE FEATURES AND RECORDS OF THE VARIOUS UTILITY COMPANIES. ACTUAL LOCATIONS AND DEPTHS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION AND HE SHALL BE RESPONSIBLE FOR PROTECTION OF SAME DURING CONSTRUCTION.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION ANY DAMAGE DONE TO EXISTING GRASS AREAS, FENCES, CURBS, SIDEWALKS, OR CONCRETE DRIVEWAYS. TRENCHES AND DAMAGED AREAS IN GRASS AREAS SHALL BE SOODED.
16. THE CONTRACTOR SHALL PROVIDE ACCESS FOR THE DELIVERY OF MAIL BY THE U.S. POSTAL SERVICE.
17. WHENEVER POWER POLES ARE ADJACENT TO THE PROPOSED TRENCH, THE CONTRACTOR SHALL PROVIDE PROPER SHORING OR OTHER SUITABLE SUPPORT DURING CONSTRUCTION OF THE UTILITY. THE METHOD MUST BE APPROVED BY THE UTILITY COMPANY.
18. CONTRACTOR SHALL NOT TUNNEL UNDER EXISTING CURBS. THE CURBS SHALL BE REMOVED AND REPLACED.
19. CONTRACTOR TO WARRANT ALL WORK FOR ONE YEAR.
20. CONTRACTOR TO REMOVE AND RELOCATE TRAFFIC SIGNS AS NEEDED.
21. ALL FILL MATERIAL SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL.
22. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNERS AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EXCEPTING FROM LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
23. PVC POLYVINYL CHLORIDE SANITARY SEWER PIPE SHALL CONFORM TO ASTM D-3034 FOR SDR 26. JOINTS SHALL BE ELASTOMERIC GASKET MATERIALS CONFORMING TO ASTM D-312. INSTALLATION SHALL CONFORM TO ASTM D-2321.
24. BEDDING MATERIAL AND INITIAL BACKFILL SHALL BE CLEAN, WELL-GRADED GRAVEL, CRUSHED SCREENINGS OR SAND, WITH 100% PASSING A 1-1/2" SIEVE, 95% TO 100% PASSING A 1" SIEVE, 25% TO 60% PASSING A 3/4" SIEVE, 0 TO 10% PASSING A NO. 4 SIEVE, AND 0 TO 5% PASSING A NO. 8 SIEVE. THE PLASTICITY INDEX SHALL BE NOT MORE THAN 12 WHEN TESTED IN ACCORDANCE WITH THE TEXAS HIGHWAY DEPARTMENT OF TRANSPORTATION TEST METHOD TEX-106-E.
25. SEE TECHNICAL SPECIFICATION 804 AND TRENCH DETAILS ON THE SANITARY SEWER DETAIL SHEET FOR THE BEDDING AND BACKFILL REQUIREMENTS.
26. THE CONTRACTOR SHALL NOTIFY THE LEON VALLEY PUBLIC WORKS OFFICE AT 681-1232 TWENTY FOUR (24) HOURS PRIOR TO:
  - A. BEGINNING THE CONSTRUCTION - ARRANGE A PRECONSTRUCTION CONFERENCE WITH STAFF AND FOREMAN
  - B. PLACEMENT OF BACKFILL OR CONCRETE.
  - C. STREET OF LANE CLOSURES.
  - D. UPON COMPLETION OF WORK.
- NO INSPECTIONS ARE AVAILABLE ON WEEKENDS OR HOLIDAYS OR AFTER 3:00 PM WEEKDAYS.
- NOTIFY THE LEON VALLEY DISPATCHER (684-3215) TWENTY FOUR HOURS PRIOR TO ANY STREET OR LANE CLOSURES.
27. BACKFILL UNDER SIDEWALKS OR WITHIN STREET PAVEMENT AREAS OR ALLEYS SUBJECT TO VEHICULAR TRAFFIC OR WITHIN 3' OF THE EDGE OF PAVEMENTS OR SIDEWALKS SHALL BE WITH FLEXIBLE BASE COMPACTED IN 8" LIFTS COMPACTED TO 95% MAX. DENSITY. SEE DETAIL SHEET 13.
28. COMPACT ALL EARTH BACKFILL WITH A MECHANICAL TAMP IN 8" LIFTS TO 90% PROCTOR DENSITY. PROVIDE SUITABLE MOISTURE CONTROL.
29. PROVIDE STEEL PLATE TRENCH COVERS FOR TRAFFIC AS NEEDED. (NO SEPARATE PAY ITEM).
30. PROVIDE DETOUR AND TRAFFIC CONTROL PLAN FOR CITY APPROVAL PRIOR TO CONSTRUCTION.
31. PROVIDE CONSTRUCTION SCHEDULE PRIOR TO CONSTRUCTION.
32. MAINTAIN ALL STREETS AND SIDEWALK AREAS IN CLEAN CONDITION DURING CONSTRUCTION. PROVIDE DUST CONTROL DURING CONSTRUCTION.
33. MANHOLES SHALL HAVE NOT MORE THAN FOUR (4) THROAT RINGS FOR ADJUSTMENT. MANHOLE COVERS TO BE SET FLUSH WITH THE TOP OF ADJACENT PAVEMENT.
34. THE CONTRACTOR SHALL PRESERVE ALL CONSTRUCTION STAKES, MARKS, ETC., IF ANY ARE DESTROYED OR REMOVED BY THE CONTRACTOR OR HIS EMPLOYEES, THEY SHALL BE REPLACED AT CONTRACTOR'S EXPENSE. OWNER WILL NOT PROVIDE CONSTRUCTION STAKING FOR POINT REPAIRS.
35. NO BLASTING IS ALLOWED.
36. PRECAST MANHOLES: PROVIDE SUBMITTAL ON PRODUCT TO THE CITY. GROUT ALL CONNECTION BOOT CAVITIES INSIDE MANHOLE TO PREVENT EXPOSED GASKETS. USE SILICONE OR OTHER FLEXIBLE SEALANT.
37. THE CONTRACTOR SHALL PAY FOR FIRE HYDRANT METER DEPOSIT (REFUNDABLE UPON RETURN). (SEE CITY UTILITY ADMINISTRATION - 684-1391 EXT. 226).
38. ALL TESTING WILL BE PROVIDED BY THE CONTRACTOR AT HIS COST.
39. ALL SEWER MAINS SHALL BE LAID TO GRADE AND SHALL NOT SAG OR OTHERWISE STAND WATER IN THE MAIN OR IN THE MANHOLE INVERT SECTION.
40. UTILITY TRENCH COMPACTION TO BE 90% PROCTOR AND PROOF ROLLED PRIOR TO APPROVAL OF THE CITY.
41. SEWER SERVICE LATERALS SHALL BE SIX-INCH (6") PVC, SDR 26, AND BE INSTALLED PER EXISTING GUIDELINES. CONTRACTOR TO FURNISH ENGINEER WITH AN AS-BUILT PLAN INDICATING THE LOCATION AND LENGTH OF EACH LATERAL. TWO-WAY CLEANOUTS SHALL BE PROVIDED AT CONNECTION TO THE EXISTING LATERAL.
42. THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH AN AS-BUILT PLAN INDICATING THE LOCATION AND LENGTH OF ALL SEWER MAINS AND PORTIONS OF MAINS WHERE REPAIRS WERE MADE AND SEWER LATERALS (BY STATION AND ELEVATION).
43. THE CONTRACTOR SHALL COMPLY WITH OSHA STANDARDS INCLUDING CONFINED SPACE ENTRY. PROVIDE ALL DEVICES AND MANPOWER.
44. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SCOPE WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTIONS SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS IN AND AROUND TRENCH EXCAVATION.
45. PRIOR TO PRELIMINARY AND FINAL ACCEPTANCE OF THE PUBLIC IMPROVEMENTS BY THE CITY, THE CONTRACTOR SHALL ARRANGE FOR A FIELD INSPECTION TO BE CONDUCTED WITH CITY FORCES. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND MANPOWER SUFFICIENT TO OPEN ALL MANHOLES, (WHICH SHALL BE PROMPTLY CLOSED). THESE INSPECTIONS WILL BE ARRANGED BY GIVING SEVEN (7) DAYS PRIOR NOTICE TO THE CITY OF THIS NEED.
46. THE CONTRACTOR SHALL FURNISH THE CITY WITH THREE (3) COPIES OF SUBMITTAL DATA ON ALL SEWER MATERIALS TO BE INCORPORATED INTO THE WORK FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION.
47. VIDEO TAPES OF ALL LINES TO BE WORKED ON ARE AVAILABLE AT THE PUBLIC WORKS OFFICE FOR VIEWING.
48. NEW MANHOLES SHALL BE TESTED.
49. LABORATORY REPORTS OF TRENCH DENSITIES PERFORMED BY THE CONTRACTOR NEED NOT BE SUBMITTED TO THE CITY. THE CITY MAY DO TESTING IN THESE AREAS.
50. TREE LIMBS THAT INTERFERE WITH CONSTRUCTION SHALL BE REMOVED BY THE CONTRACTOR USING APPROVED NURSERY TECHNIQUES.
51. ALL CONNECTIONS AT MANHOLES ARE TO BE MADE TO THE MANHOLE AND NOT TO THE EXISTING PIPE. SEE DETAIL C SHEET 8.
52. BACKFILL REQUIREMENTS ARE AS SHOWN ON SHEET 8. ASPHALT TREATED BASE OR FLOWABLE BACKFILL MAY BE SUBSTITUTED FOR FLEXIBLE BASE AT CONTRACTOR'S COST.
53. POINT REPAIRS AND LINE REPLACEMENTS WILL NOT BE STAKED FOR CONSTRUCTION BY THE OWNER. POINT REPAIRS AND LINE STAKING SHALL BE THE CONTRACTOR'S RESPONSIBILITY BASED ON PLAN INFORMATION. THE TOPS OF MANHOLES ARE USED AS BENCHMARKS.
54. STATIONING OF REQUIRED REPAIRS IS BASED ON DISTANCES RECORDED DURING TELEVISION OF THE LINES AND MAY VARY SLIGHTLY FROM ACTUAL.
55. THE BID PRICE OF ALL POINT REPAIRS THAT ARE LOCATED IN PAVED AREAS INCLUDES SAW-CUTTING & REPLACING PAVT.
56. PVC SDR 26 SANITARY SEWER PIPE SHALL BE USED FOR ALL POINT REPAIRS. FERNCO ADAPTORS SHALL BE USED TO CONNECT THE NEW PVC PIPE TO THE EXISTING PIPE, INCLUDING LATERALS.
57. THE CONTRACTOR SHALL CALL FOR AN INSPECTION BEFORE BACKFILLING POINT REPAIRS.



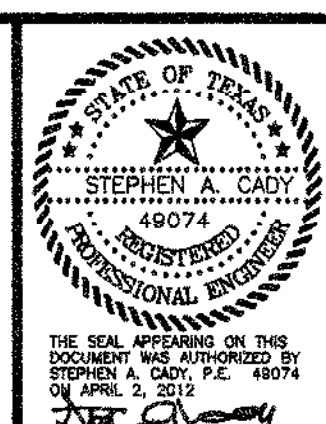
**San Antonio Design Group Inc.**  
CONSULTING ENGINEERS  
ALL PROJECTS  
SAN ANTONIO, TEXAS 78211  
PH: (210) 228-6545 FAX: (210) 228-6546

**CITY OF LEON VALLEY**  
**2012 WATER AND SANITARY SEWER PROJECTS**  
**LOCATION MAP & GENERAL NOTES**

J.A.S.  
DRAWN BY:  
S.A.C.  
CHECKED BY:  
S.A.C.  
APPROVED BY:  
APRIL 2012  
DATE:

REVISIONS

SHEET: **2**  
OF: **10**

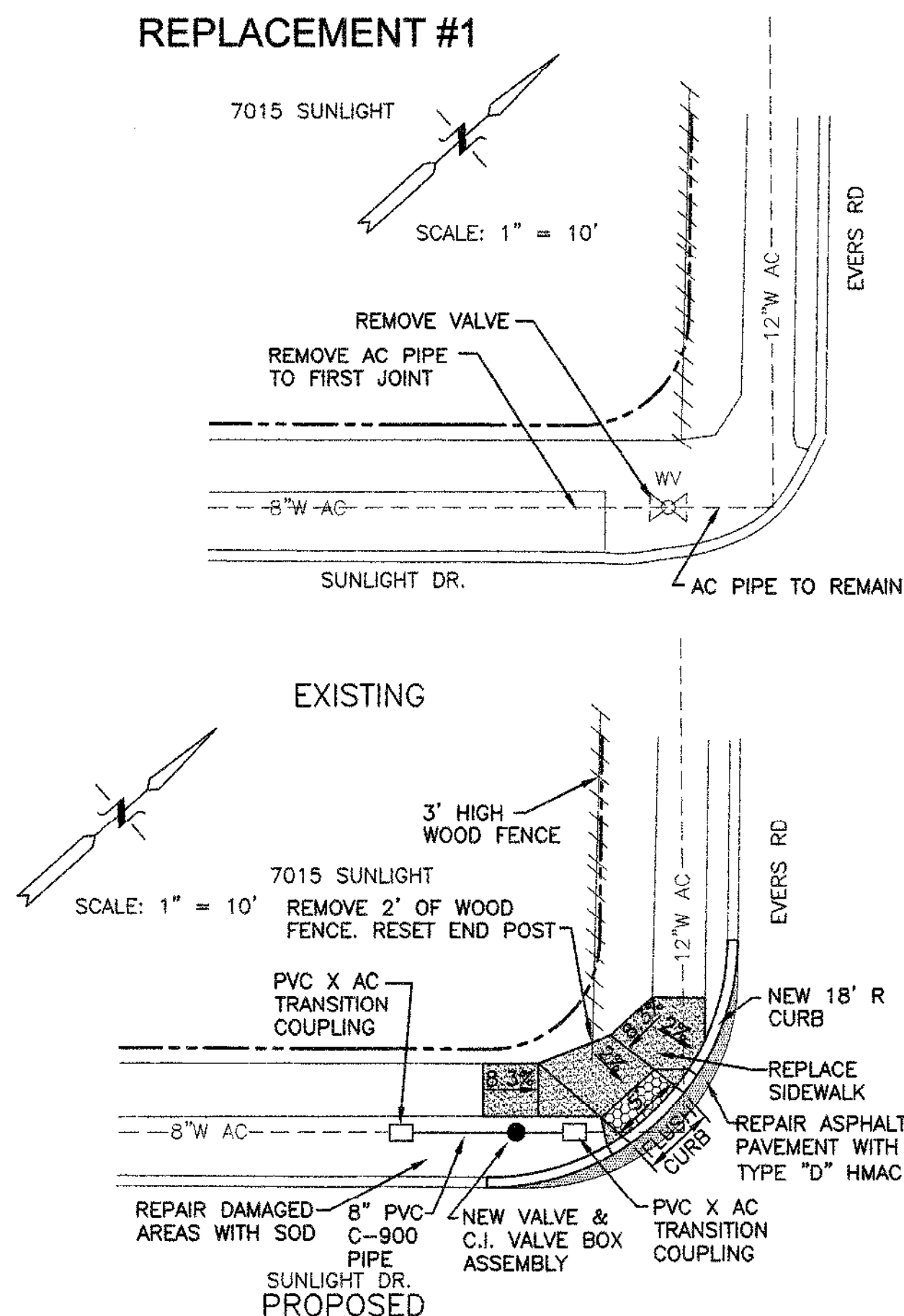


**San Antonio Design Group Inc.**  
CONSULTING ENGINEERS  
10000 N. LOOP WEST, SUITE 216  
SAN ANTONIO, TEXAS 78241  
PH: (210) 226-6545 FAX: (210) 226-6546

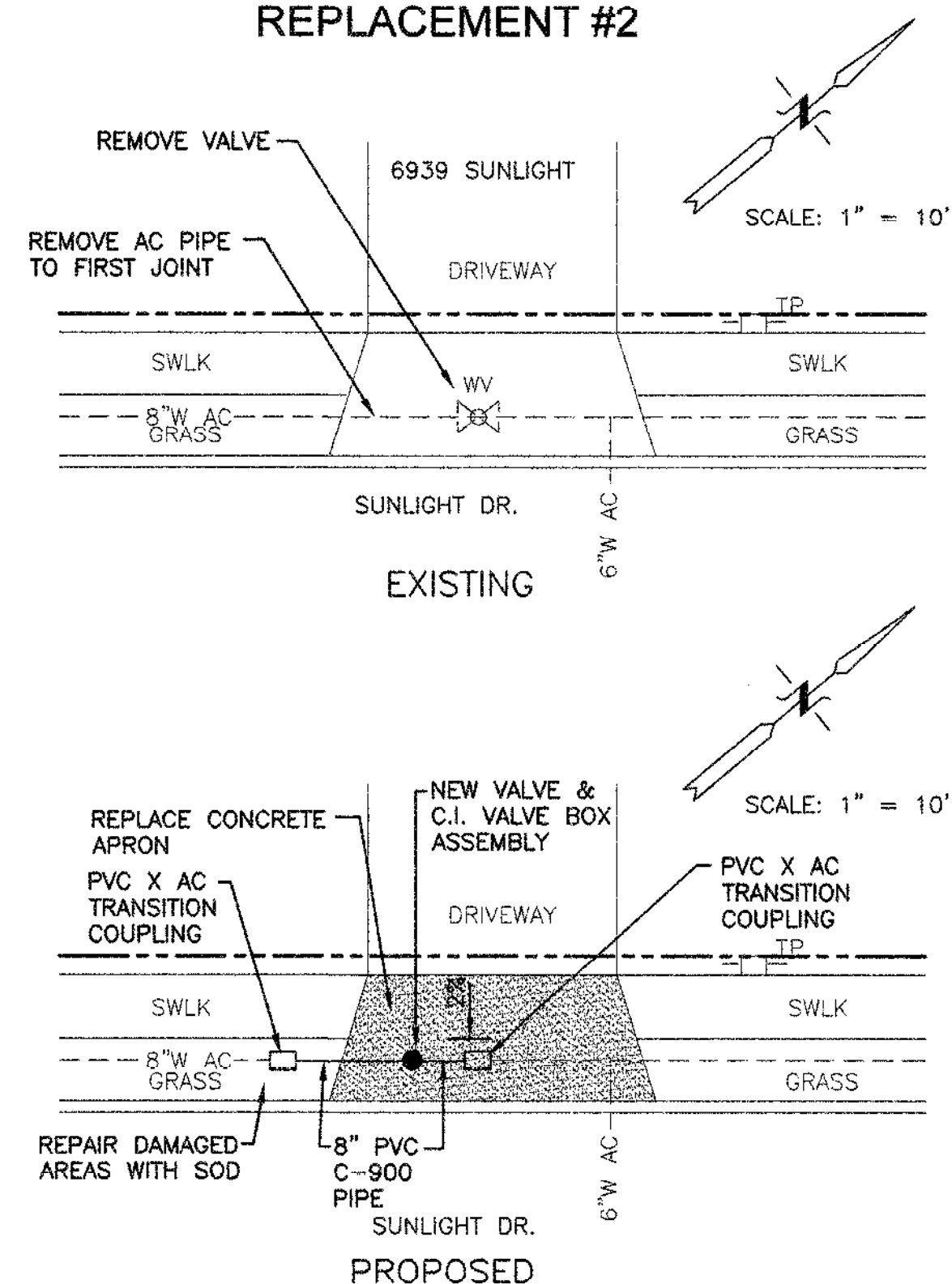
**CITY OF LEON VALLEY**  
**2012 WATER AND SANITARY SEWER PROJECTS**  
**WATER VALVE REPLACEMENT #1 THRU #7**

J.A.S.  
DRAWN BY:  
S.A.C.  
CHECKED BY:  
S.A.C.  
APPROVED BY:  
APRIL 2012  
DATE:  
REVISIONS  
SHEET: **3**  
OF: **10**

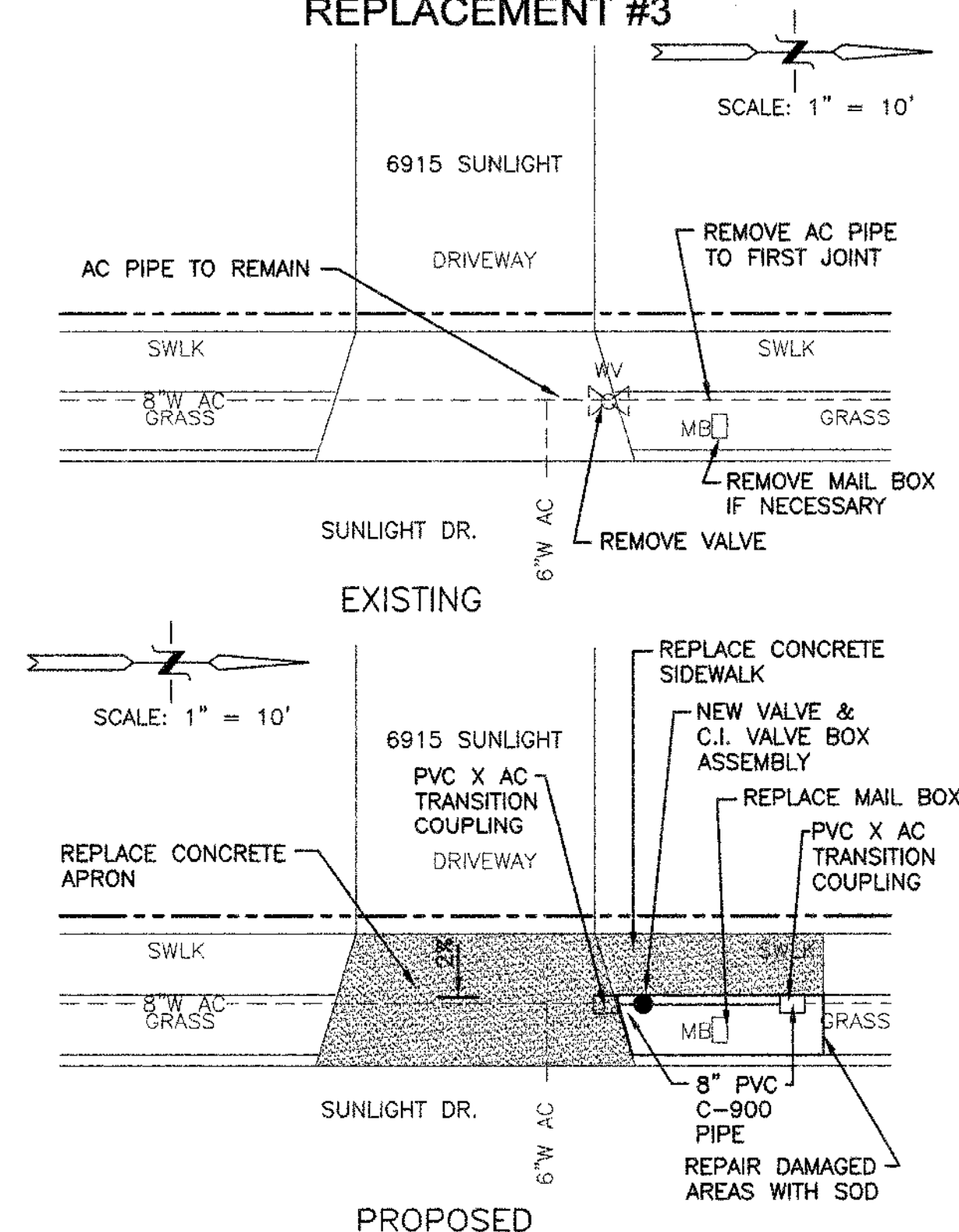
### WATER VALVE REPLACEMENT #1



### WATER VALVE REPLACEMENT #2



### WATER VALVE REPLACEMENT #3



### LEGEND

- RIGHT-OF-WAY LINE
- ===== EXIST. SIDEWALK
- ===== EXIST. CURB
- ===== EXIST. WOOD FENCE
- ===== EXIST. CHAIN LINK FENCE
- UT--- TP EXIST. UNDERGROUND TELEPHONE & PEDESTAL
- UE--- TR EXIST. UNDERGROUND ELECTRIC @ TRANSFORMER
- G2"--- GM EXIST. GAS MAIN, VALVE & METER
- W8"--- W EXIST. WATER MAIN, FIRE HYDRANT, VALVE, METER
- SS8"--- SM EXIST. SANITARY SEWER & MANHOLE

### ASBESTOS CEMENT PIPE NOTE

ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE AND WHICH IS KNOWN TO CONTAIN ASBESTOS-CONTAINING MATERIAL (ACM), IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF PIPE OCCUR. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000, "SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE".

NOTE: SEE SHEET 9 FOR BACKFILL REQUIREMENTS

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OF SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

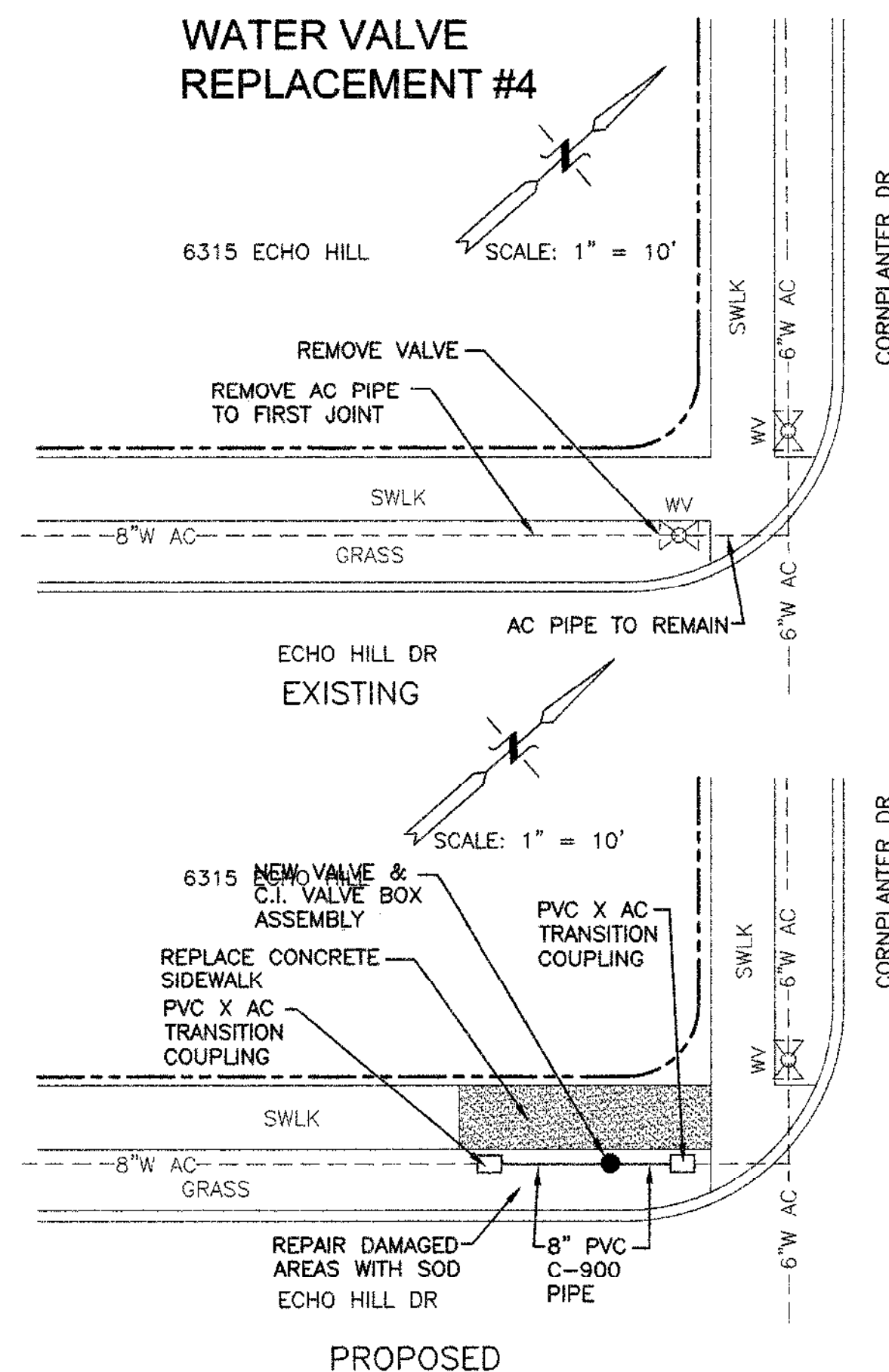
### CPS NOTE

CALL THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192-181, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS OVERHEAD AND UNDERGROUND FACILITIES IF ADJACENT TO WORK AREAS.

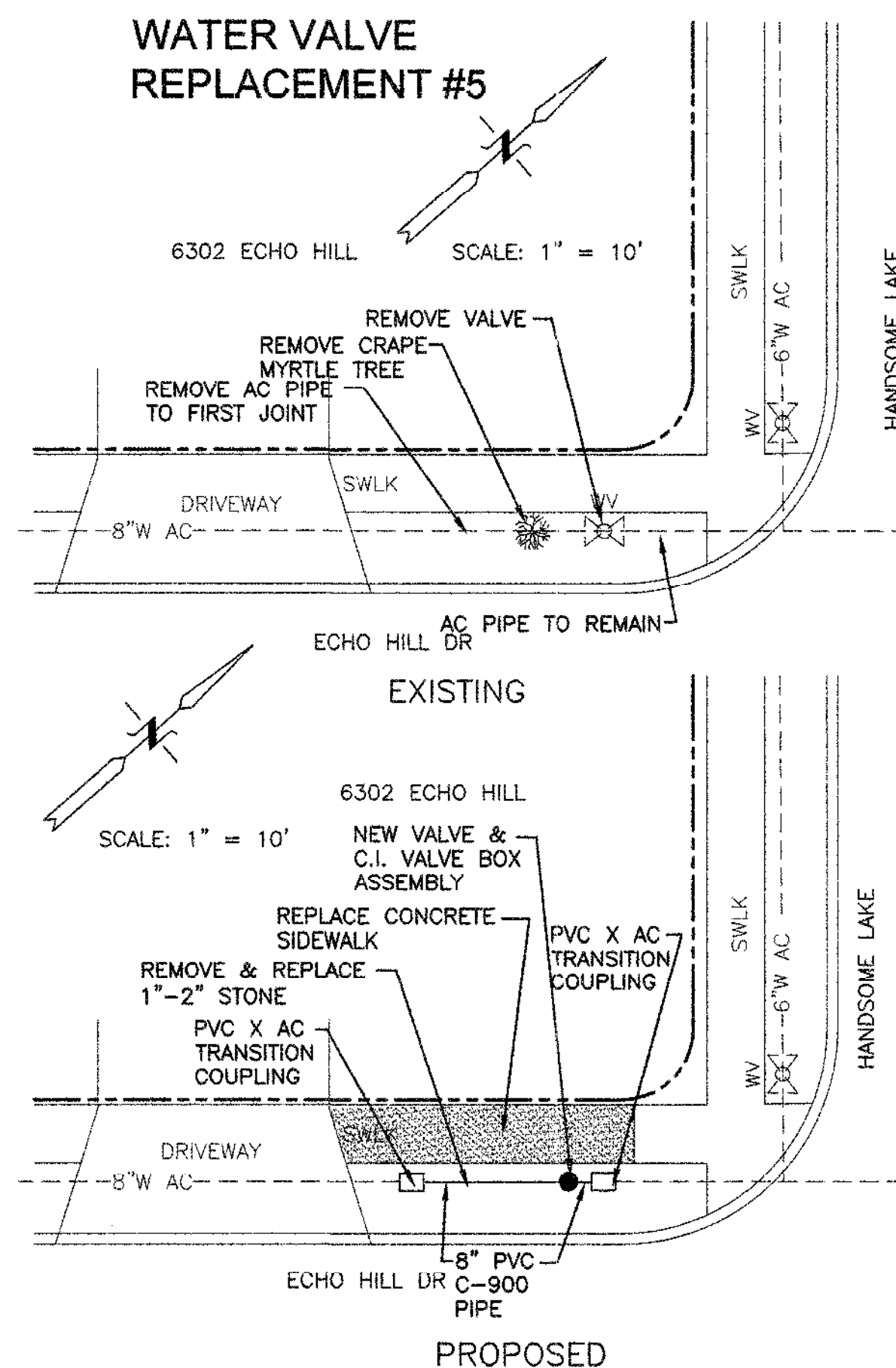
### SWBT NOTE

NOTE: "THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR TO CONTACT THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS PRIOR TO EXCAVATION. CONTRACTOR IS TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION."

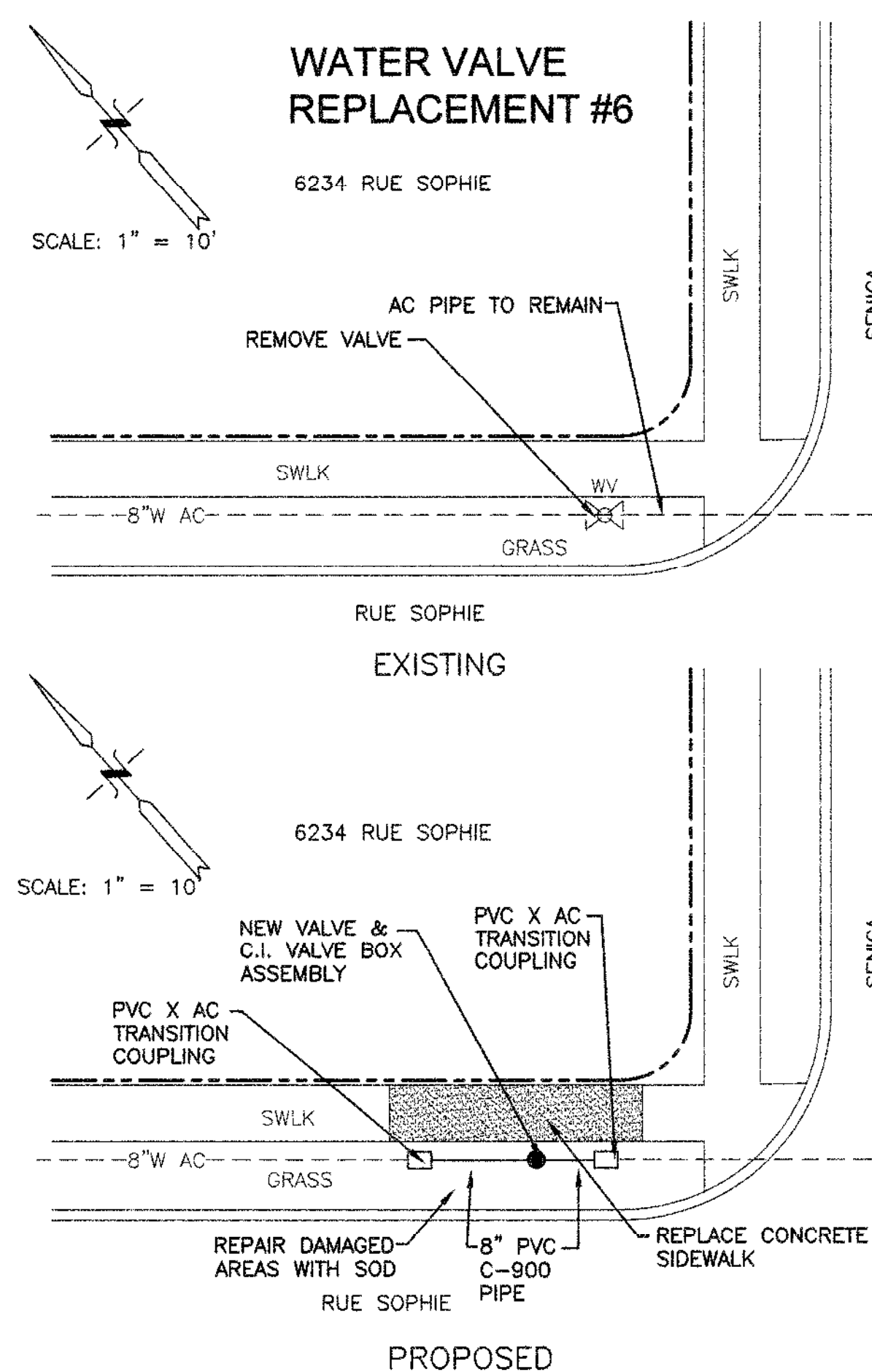
### WATER VALVE REPLACEMENT #4



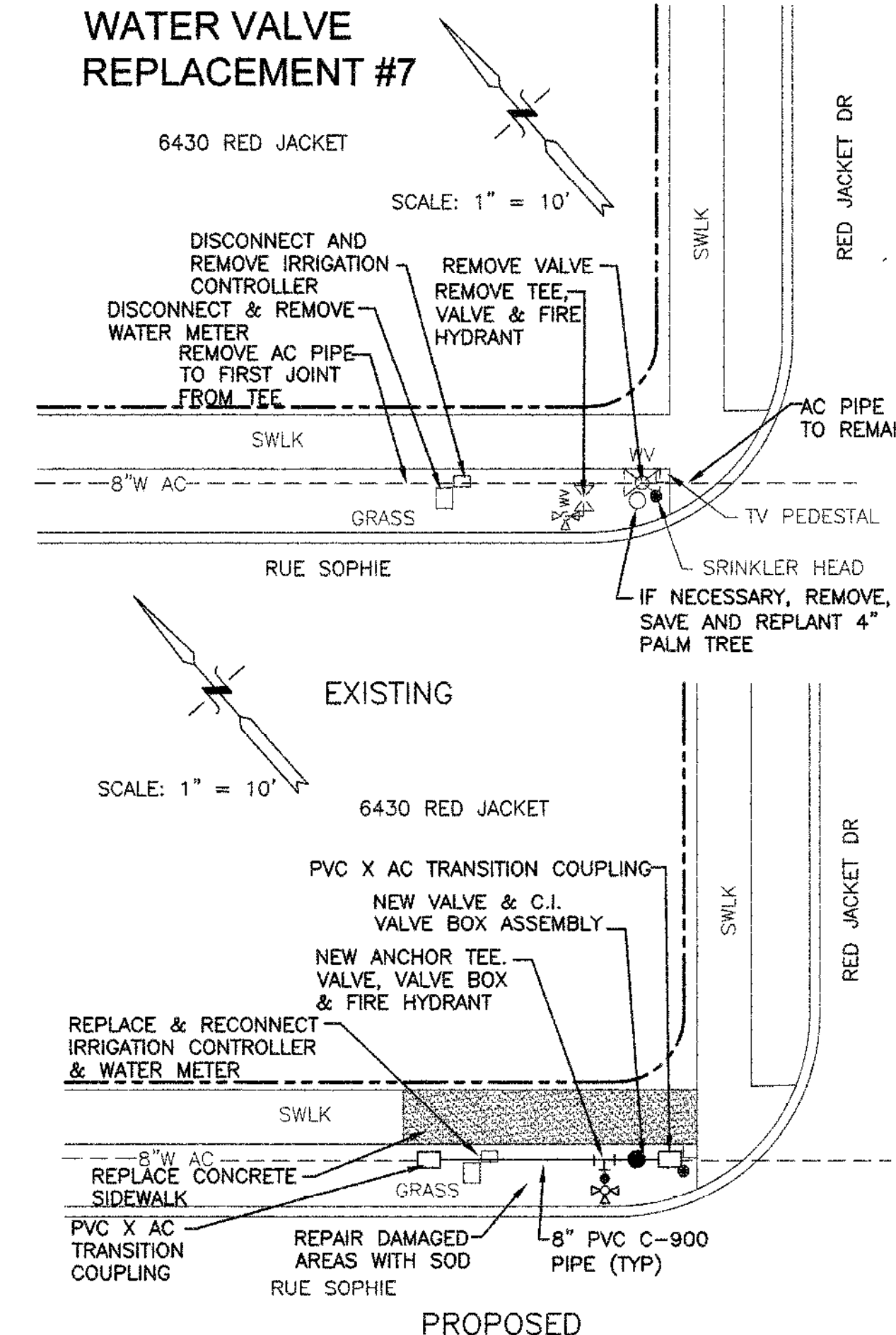
### WATER VALVE REPLACEMENT #5



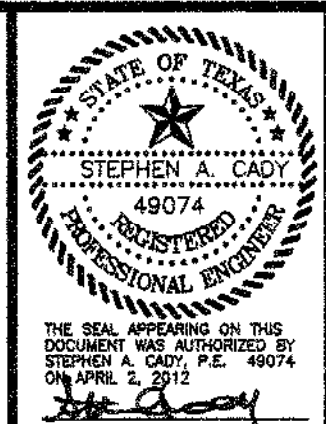
### WATER VALVE REPLACEMENT #6



### WATER VALVE REPLACEMENT #7





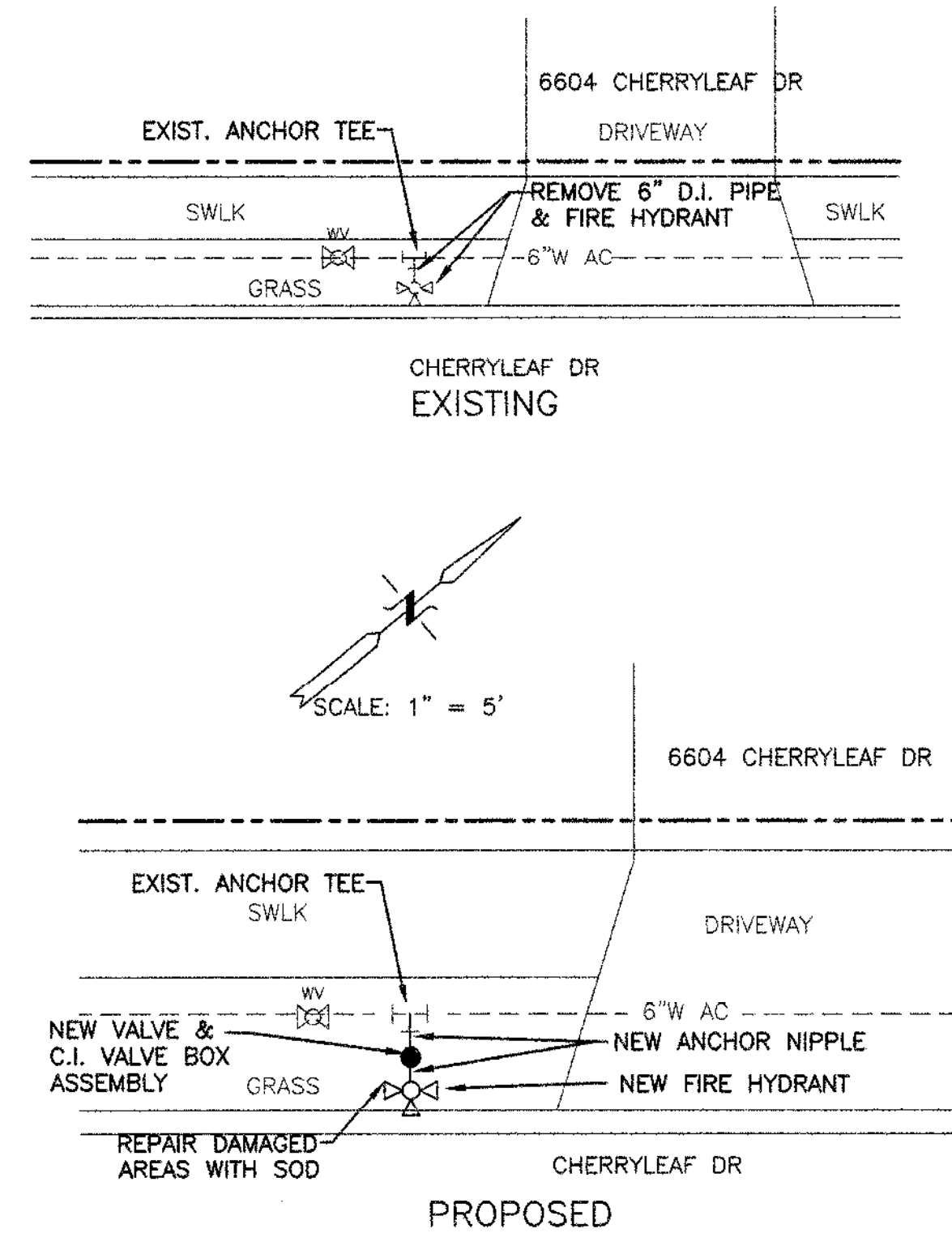


**San Antonio Design Group Inc.**  
CONSULTING ENGINEERS  
700 LOCKHILL SHELWAY SUITE 216  
SAN ANTONIO, TEXAS 78213  
PH: (210) 228-6545 FAX: (210) 228-6546

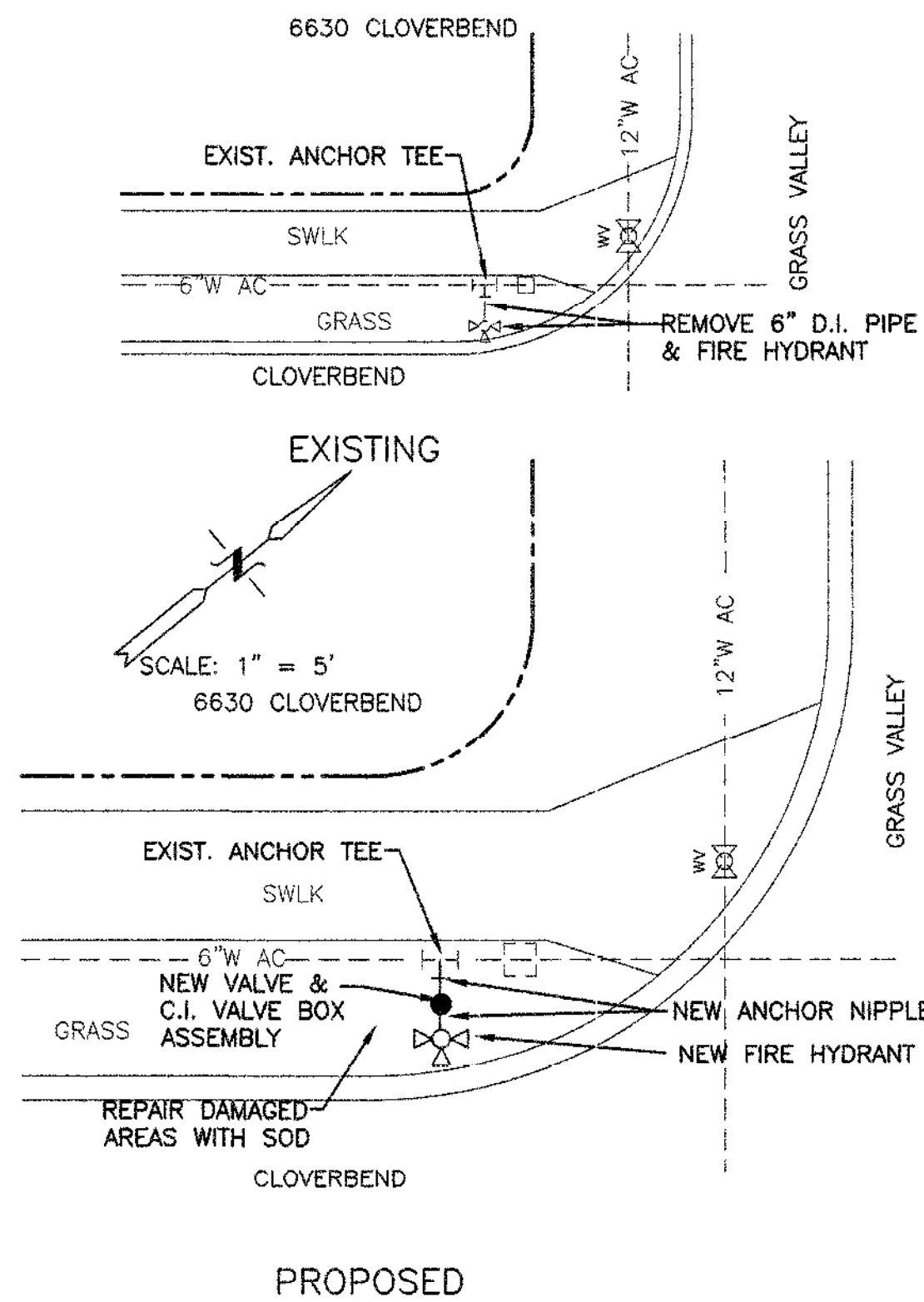
**CITY OF LEON VALLEY**  
**2012 WATER AND SANITARY SEWER PROJECTS**

J.A.S.  
DRAWN BY:  
S.A.C.  
CHECKED BY:  
S.A.C.  
APPROVED BY:  
APRIL 2012  
DATE:  
REVISIONS  
SHEET: **5**  
OF: **10**

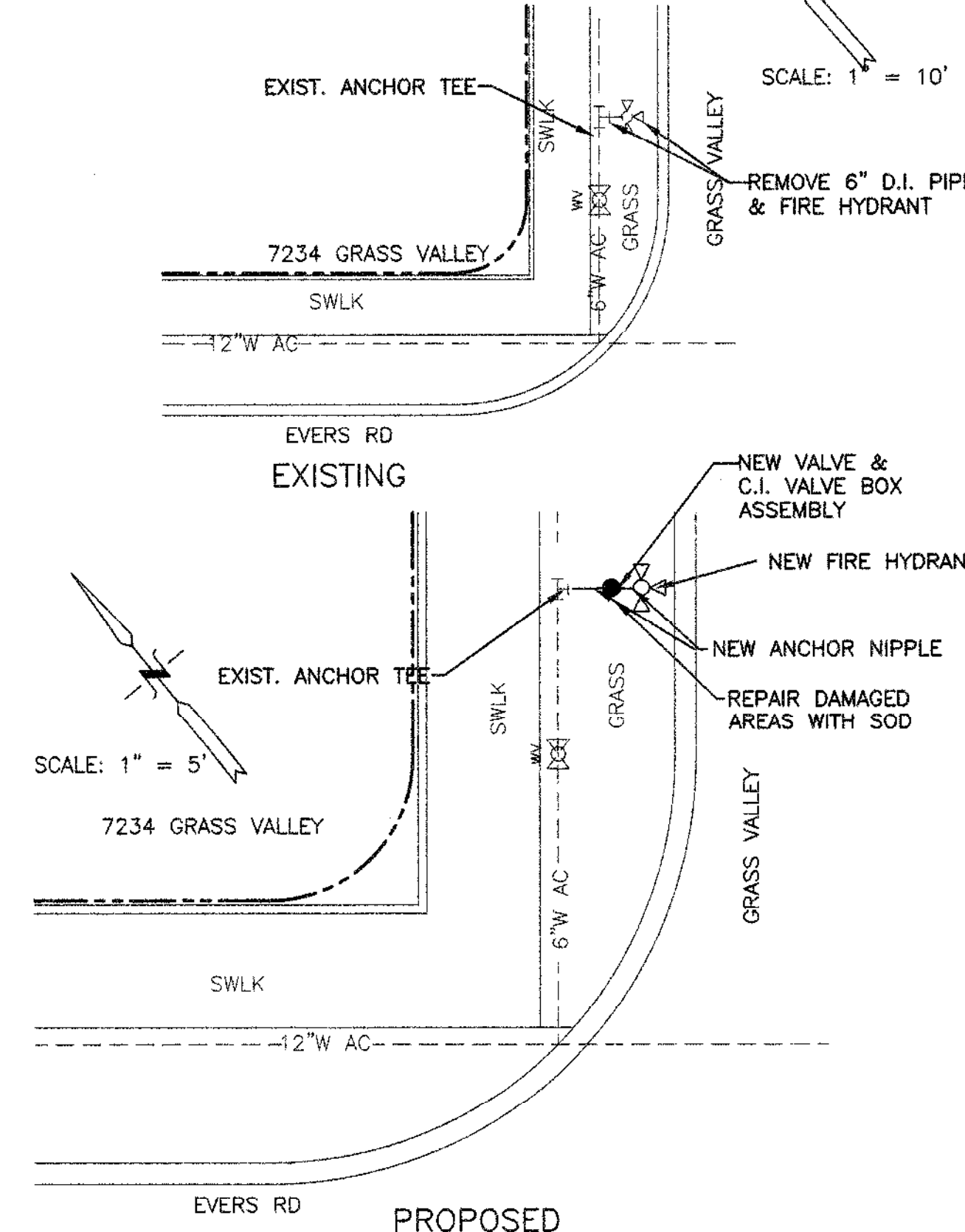
**FIRE HYDRANT REPLACEMENT #1**



**FIRE HYDRANT REPLACEMENT #2**



**FIRE HYDRANT REPLACEMENT #3**



**LEGEND**

- RIGHT-OF-WAY LINE
- EXIST. SIDEWALK
- EXIST. CURB
- EXIST. WOOD FENCE
- EXIST. CHAIN LINK FENCE
- UT--- TP
- UE--- TR
- G2"--- GM
- W8"--- W
- SS8"--- EXIST. UNDERGROUND TELEPHONE & PEDESTAL
- EXIST. UNDERGROUND ELECTRIC @ TRANSFORMER
- EXIST. GAS MAIN, VALVE & METER
- EXIST. WATER MAIN, FIRE HYDRANT, VALVE, METER
- EXIST. SANITARY SEWER & MANHOLE

**ASBESTOS CEMENT PIPE NOTE**  
ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE AND WHICH IS KNOWN TO CONTAIN ASBESTOS-CONTAINING MATERIAL (ACM), IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF PIPE OCCURS. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000, "SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE".

NOTE: SEE SHEET 9 FOR BACKFILL REQUIREMENTS

**TRENCH EXCAVATION SAFETY PROTECTION**

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OF SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

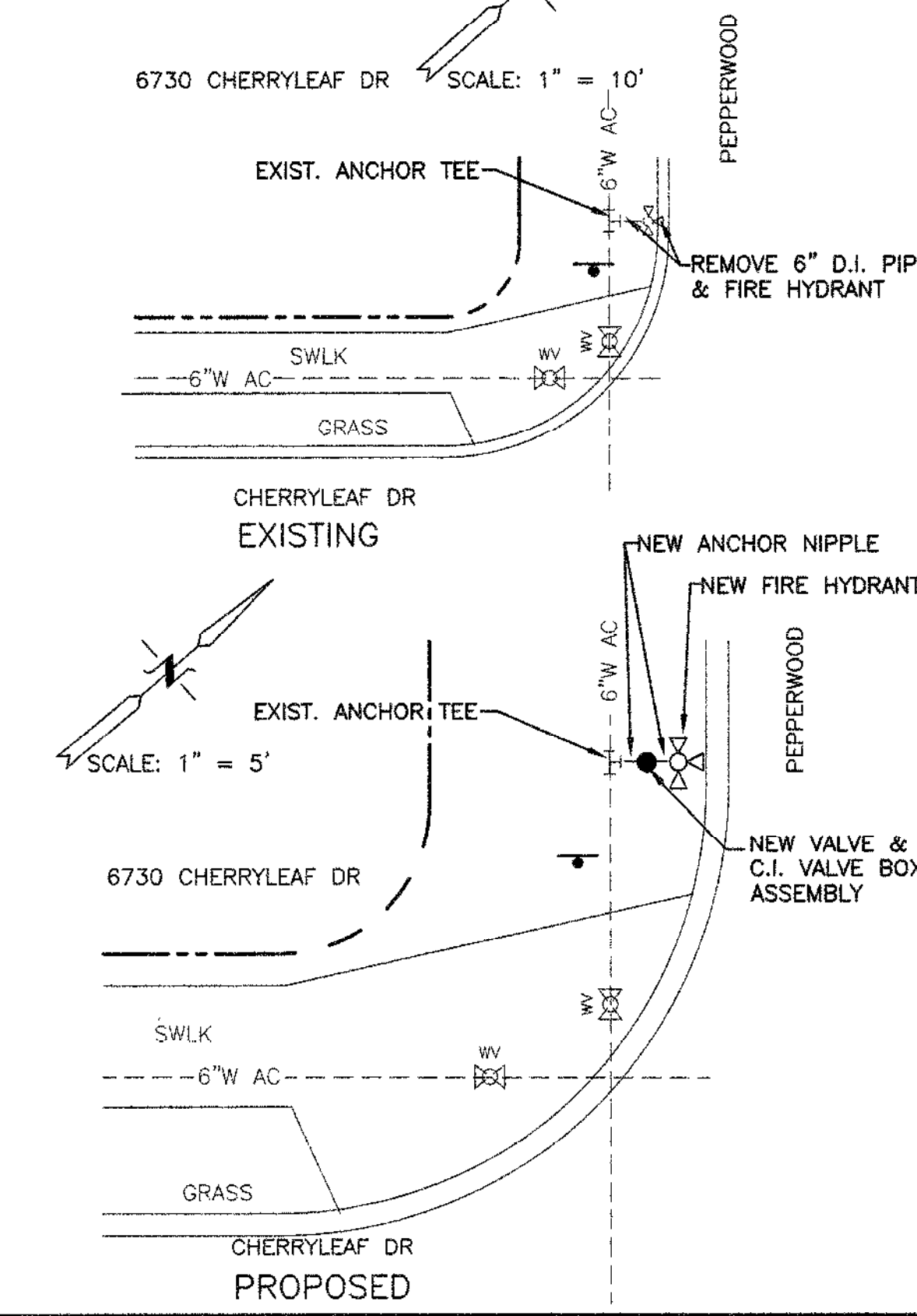
**CPS NOTE**

CALL THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192-191, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS OVERHEAD AND UNDERGROUND FACILITIES IF ADJACENT TO WORK AREAS.

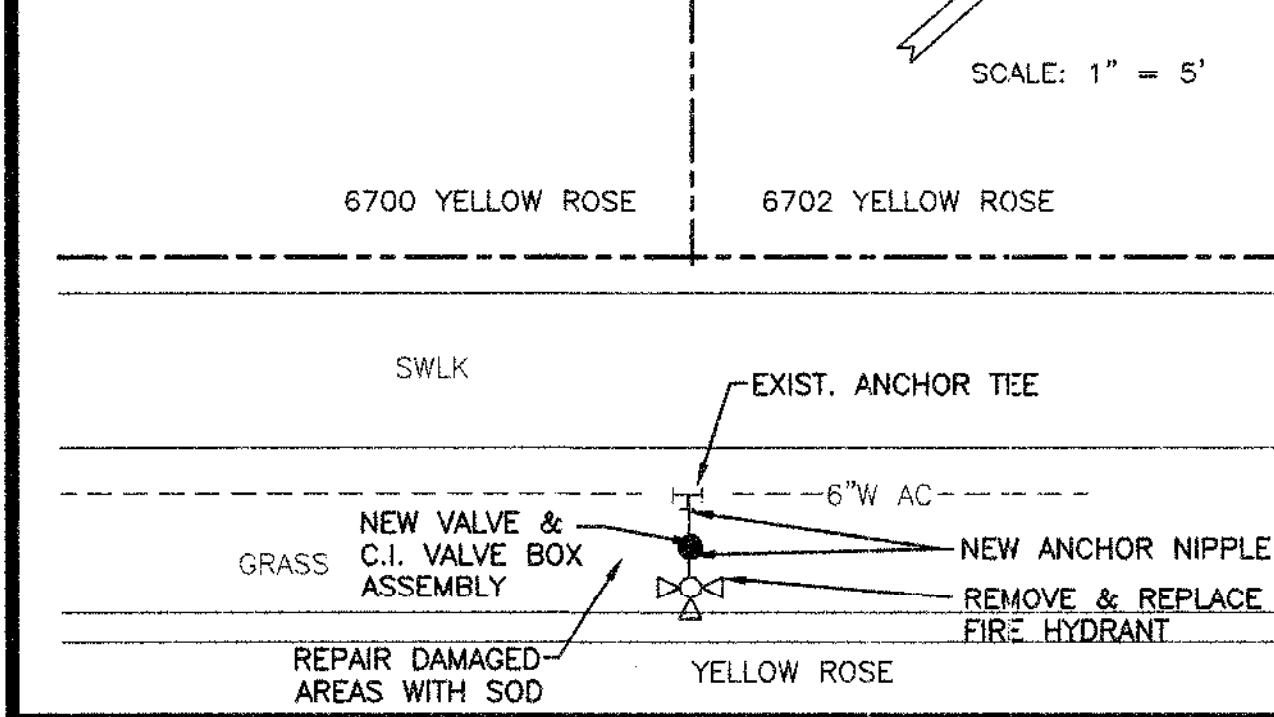
**SWBT NOTE**

NOTE: "THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR TO CONTACT THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS PRIOR TO EXCAVATION. CONTRACTOR IS TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION."

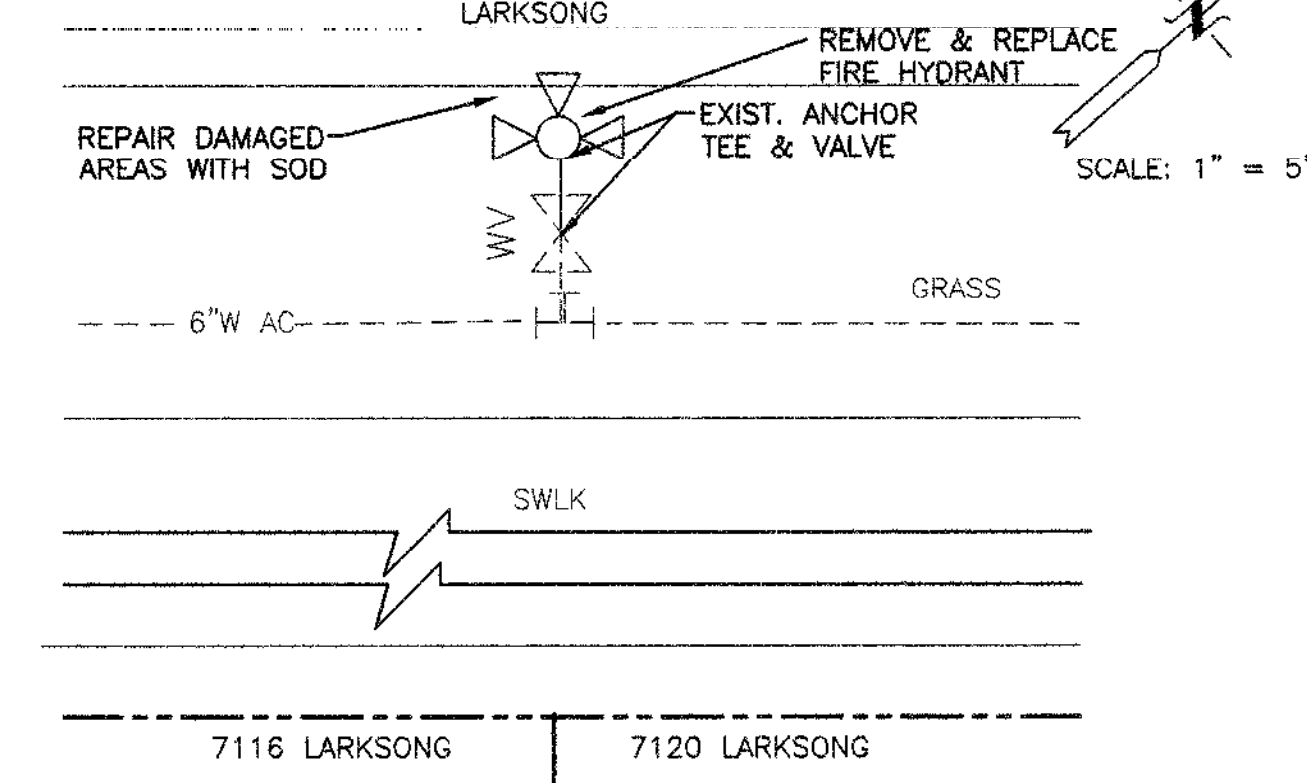
**FIRE HYDRANT REPLACEMENT #4**



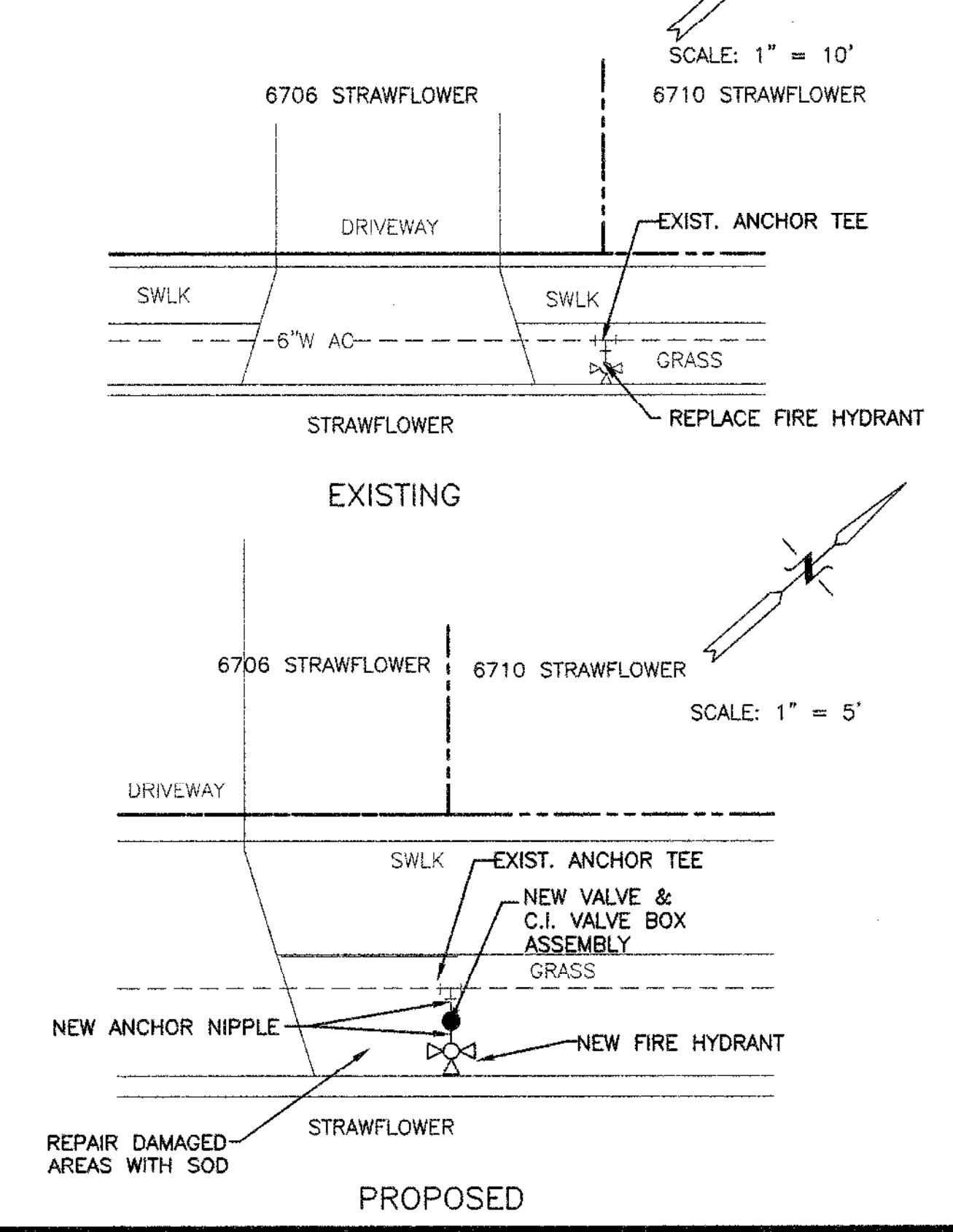
**FIRE HYDRANT REPLACEMENT #5**



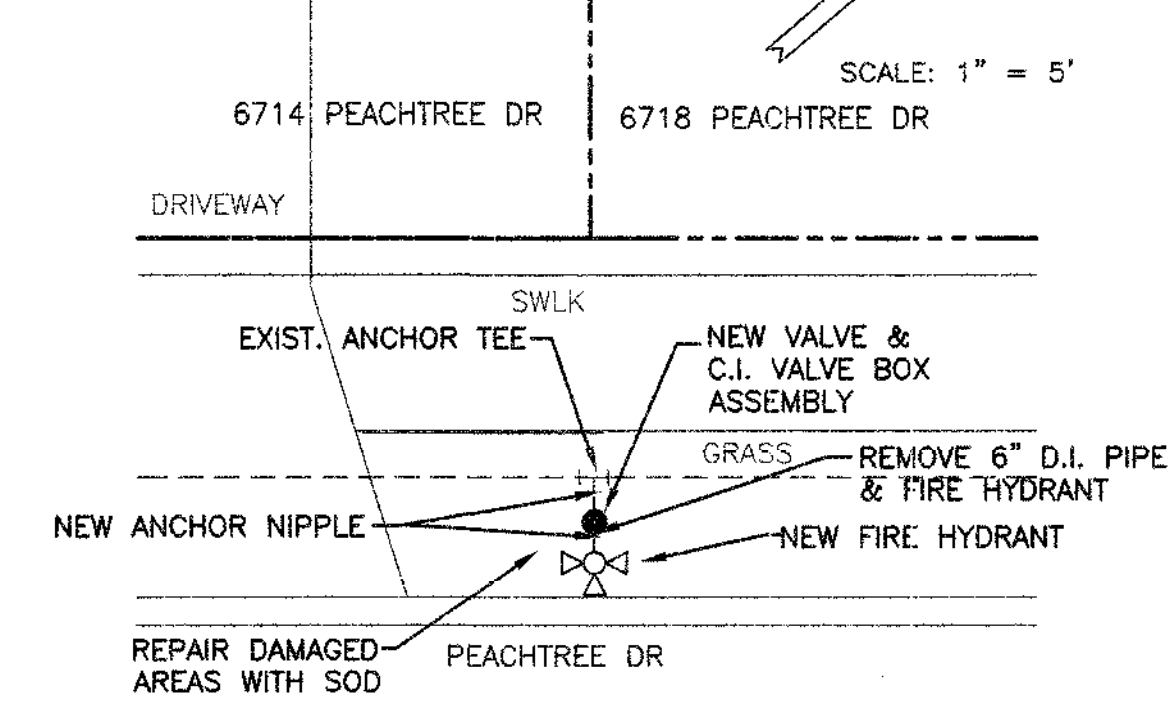
**FIRE HYDRANT REPLACEMENT #7**



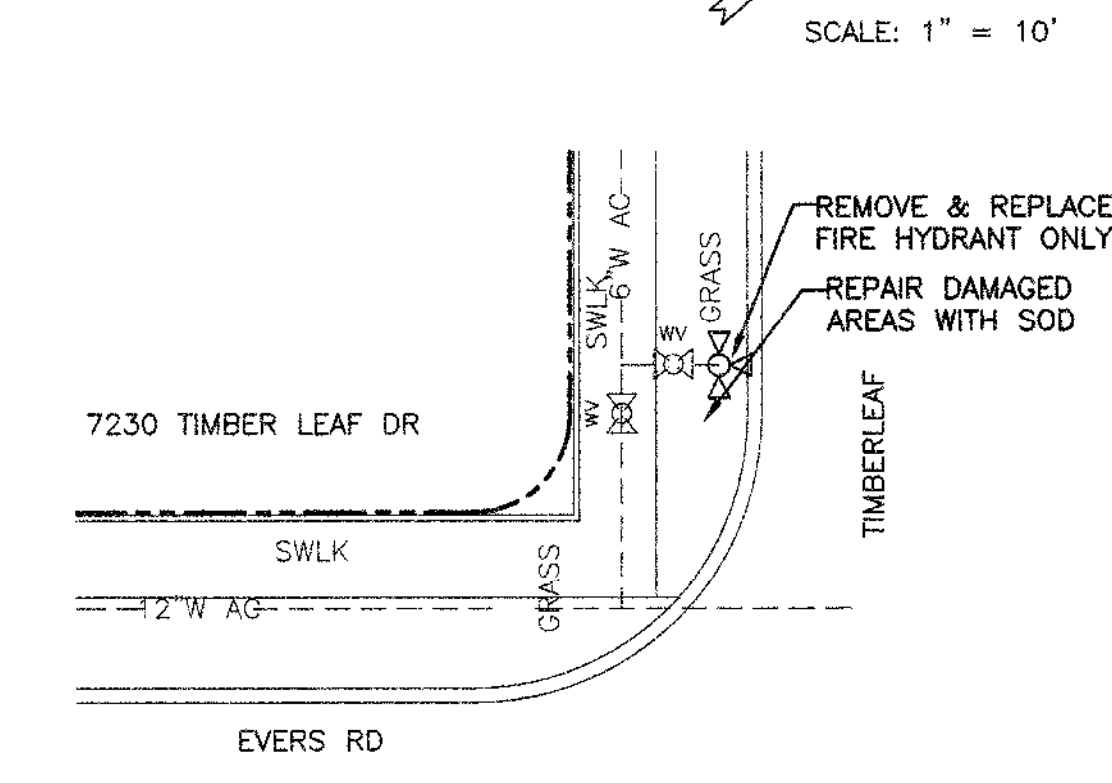
**FIRE HYDRANT REPLACEMENT #9**

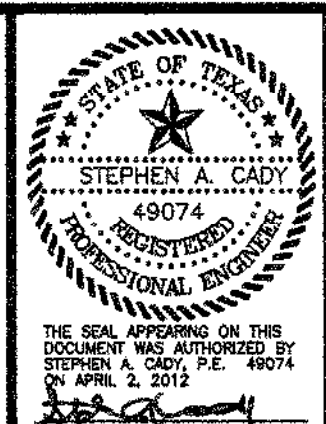
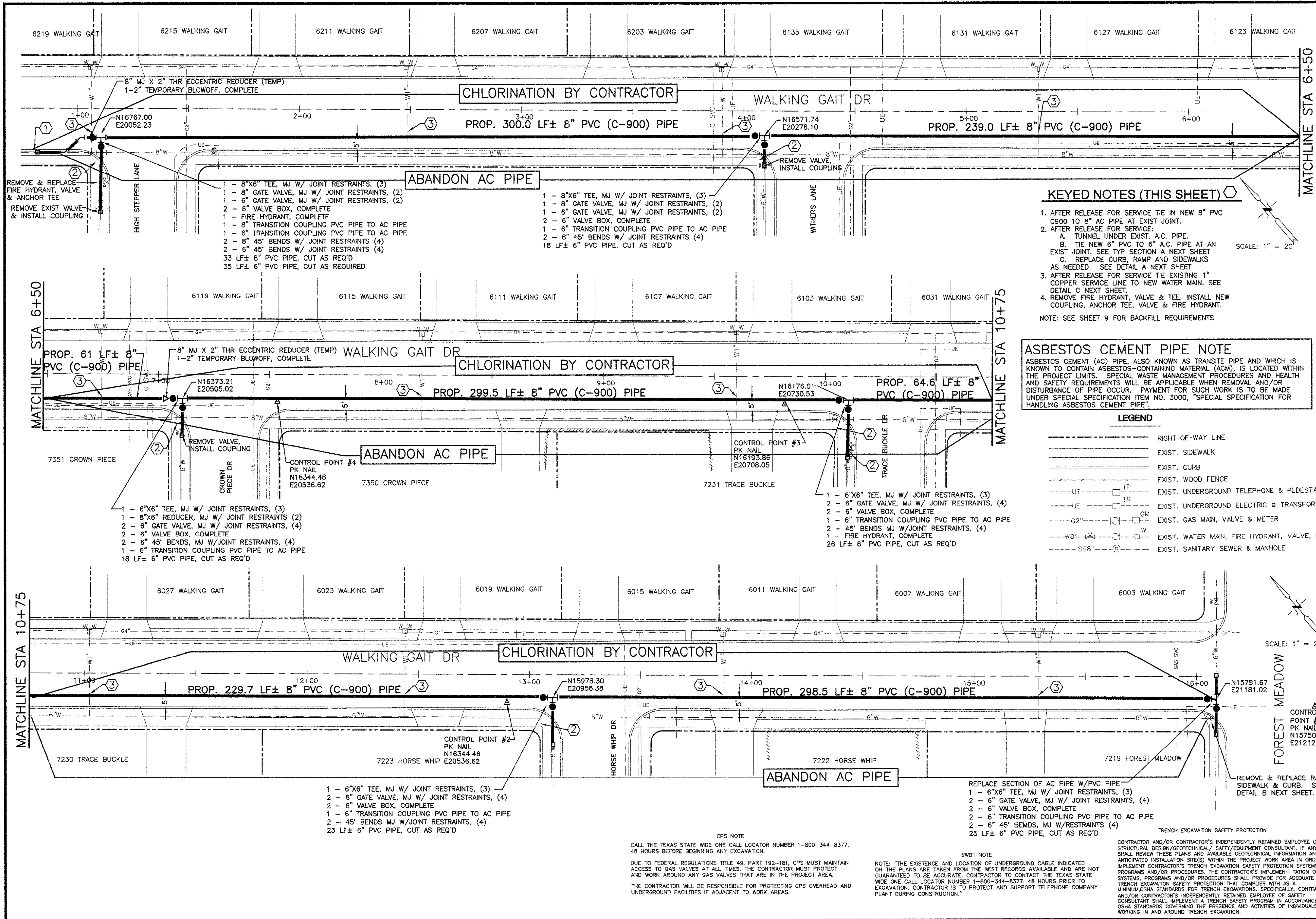


**FIRE HYDRANT REPLACEMENT #6**



**FIRE HYDRANT REPLACEMENT #8**

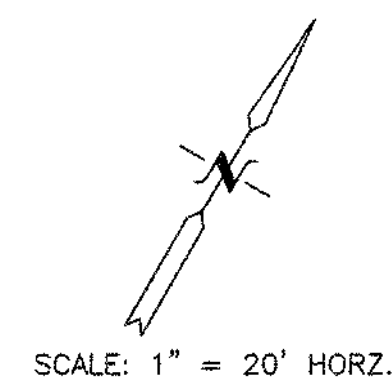





**San Antonio Design Group Inc.**  
CONSULTING ENGINEERS  
201 ROCKWELL SELMA, SUITE 216  
SAN ANTONIO, TEXAS 78213  
PH: (210) 226-6545 FAX: (210) 226-6546

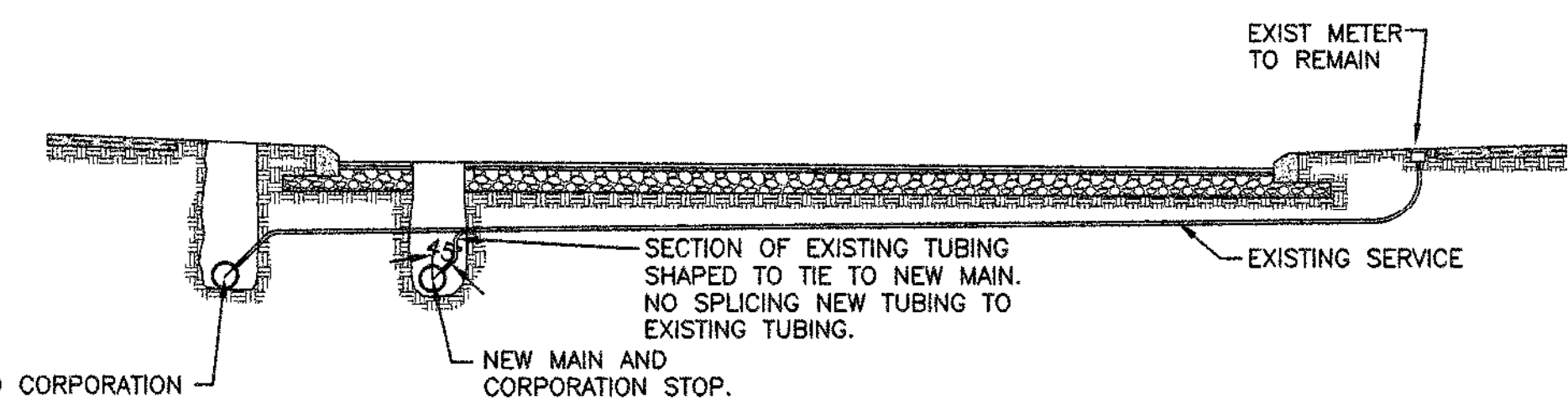
**CITY OF LEON VALLEY**  
**2012 WATER AND SANITARY SEWER PROJECTS**  
**WATER MAIN REPLACEMENT - WALKING GAIT**

J.A.S.  
DRAWN BY:  
S.A.C.  
CHECKED BY:  
S.A.C.  
APPROVED BY:  
APRIL 2012  
DATE:  
REVISIONS  
SHEET: **6**  
OF: **10**




 RIGHT-OF-WAY LINE  
 EXIST. SIDEWALK  
 EXIST. CURB  
 EXIST. WOOD FENCE  
 EXIST. CHAIN LINK FENCE  
 UT TP EXIST. UNDERGROUND TELEPHONE & PEDESTAL  
 UE TR EXIST. UNDERGROUND ELECTRIC & TRANSFORMER  
 G2" GM EXIST. GAS MAIN, VALVE & METER  
 W8" W EXIST. WATER MAIN, FIRE HYDRANT, VALVE, METER  
 S8" EXIST. SANITARY SEWER & MANHOLE  
 EDGE OF ASPHALT PAVEMENT

ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE AND WHICH IS KNOWN TO CONTAIN ASBESTOS--CONTAINING MATERIAL (ACM), IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF PIPE OCCUR. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000, "SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE".



### DETAIL C LONG RECONNECTION



TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGNING/GEOTECHNICAL / SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THE PLANS AND THE PROJECT'S GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM/OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OF SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CPS NOTE

CALL THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.

DUE TO FEDERAL REGULATIONS TITLE 49, PART 192-181, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS OVERHEAD AND UNDERGROUND FACILITIES IF ADJACENT TO WORK AREAS.

SWBT NOTE

NOTE: "THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR TO CONTACT THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS PRIOR TO EXCAVATION. CONTRACTOR IS TO PROTECT AND SUPPORT TELEPHONE COMPAN PLANT DURING CONSTRUCTION."

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OF SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CPS NOTE

CALL THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.

DUE TO FEDERAL REGULATIONS TITLE 49, PART 192-181, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS OVERHEAD AND UNDERGROUND FACILITIES IF ADJACENT TO WORK AREAS.

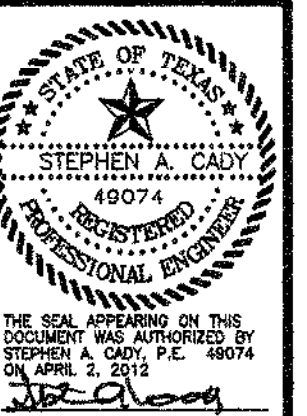
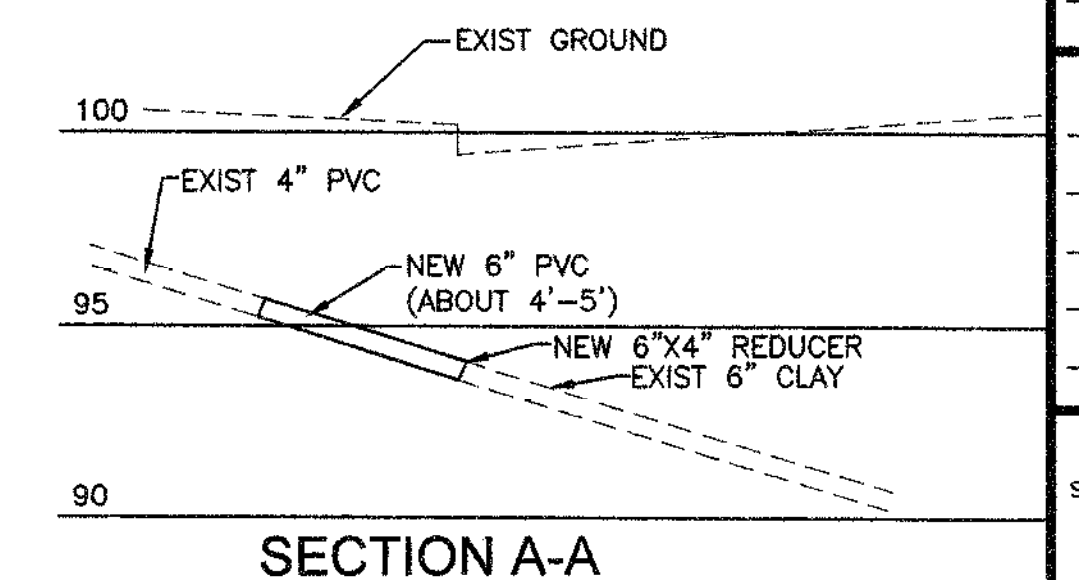
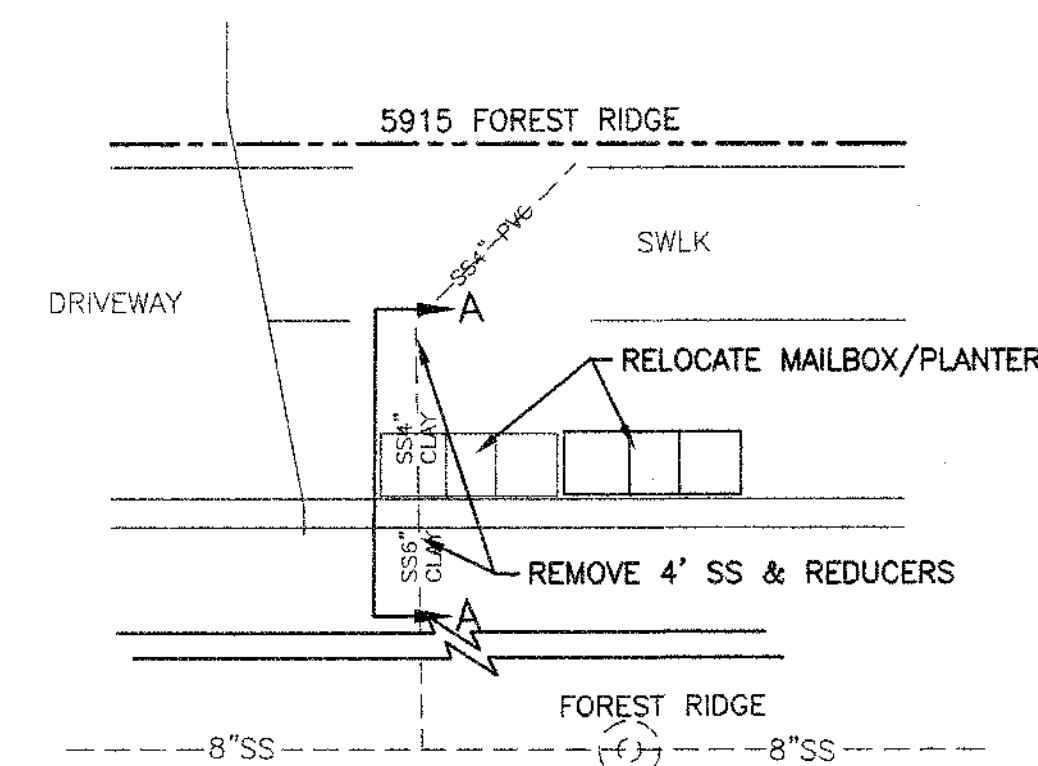
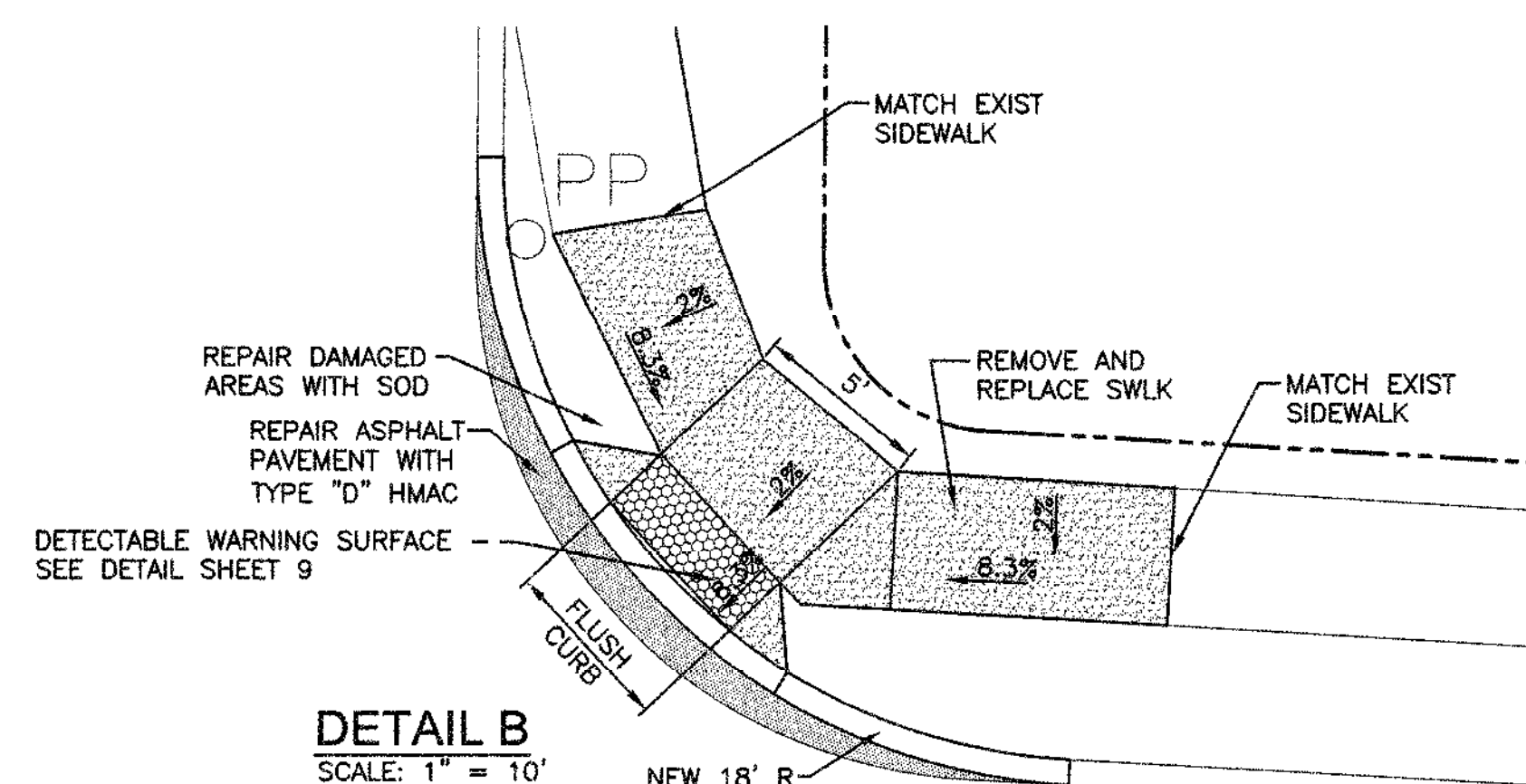
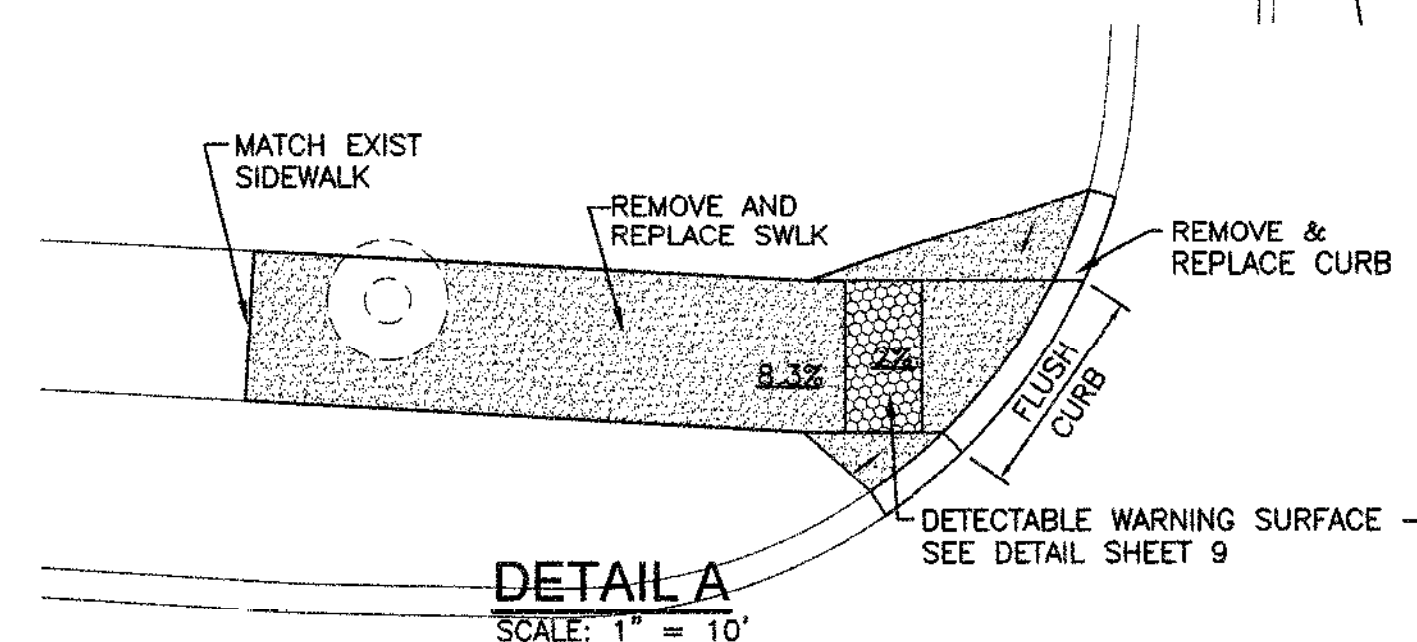
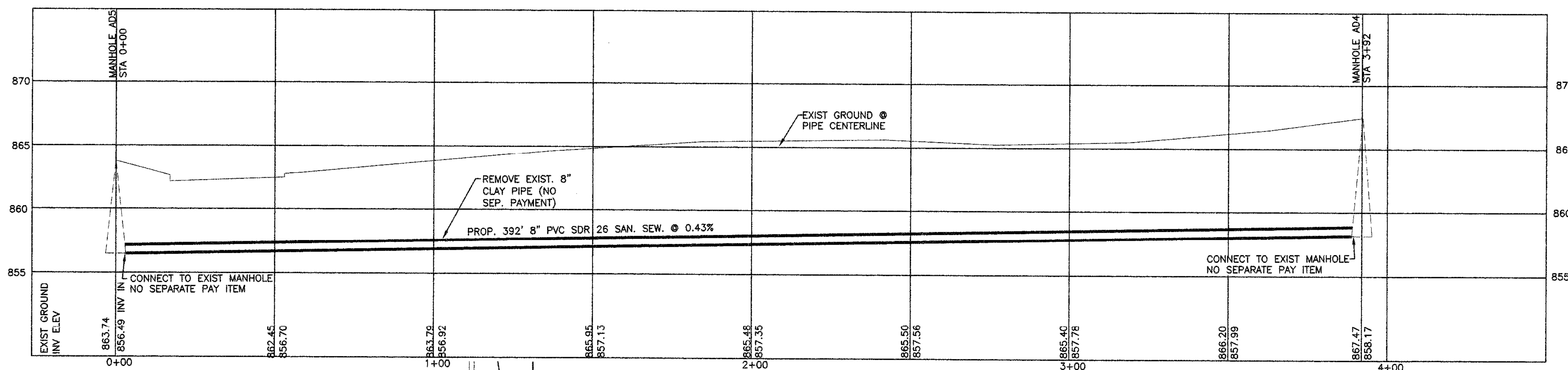
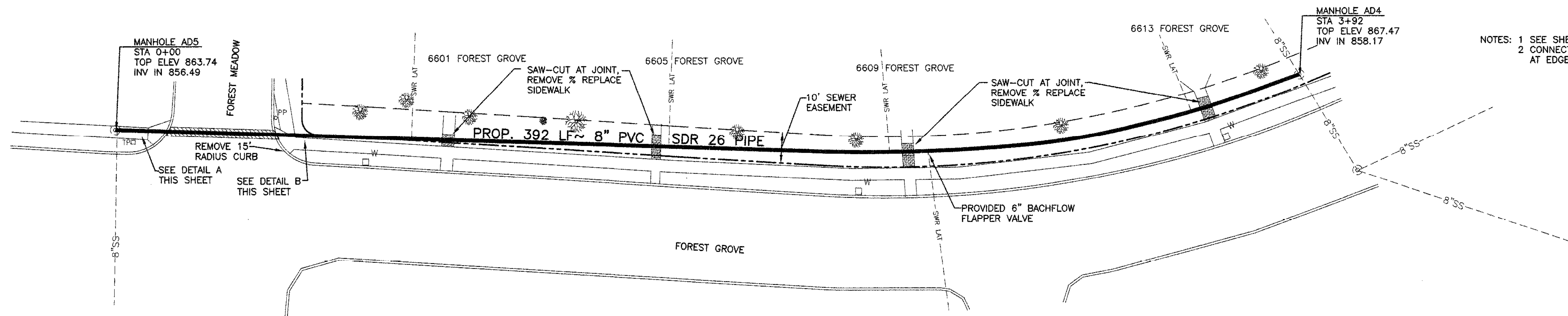
SWBT NOTE

NOTE: "THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR TO CONTACT THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS PRIOR TO EXCAVATION. CONTRACTOR IS TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION."

SCALE: 1" = 20' HORZ.  
1" = 5' VERT.

LEGEND	
	RIGHT-OF-WAY LINE
	EXIST. SIDEWALK
	EXIST. CURB
	EXIST. WOOD FENCE
	EXIST. CHAIN LINK FENCE
	EXIST. UNDERGROUND TELEPHONE & PEDESTAL
	EXIST. UNDERGROUND ELECTRIC & TRANSFORMER
	EXIST. GAS MAIN, VALVE & METER
	EXIST. WATER MAIN, FIRE HYDRANT, VALVE, METER
	EXIST. SANITARY SEWER & MANHOLE
	NEW SANITARY SEWER & MANHOLE
	SEWER LATERAL W/ TWO-WAY CLEANOUT

NOTES: 1 SEE SHEET 9 FOR BACKFILL REQUIREMENTS  
2 CONNECT NEW LATERAL TO EXIST LATERAL AT EDGE OF TRENCH



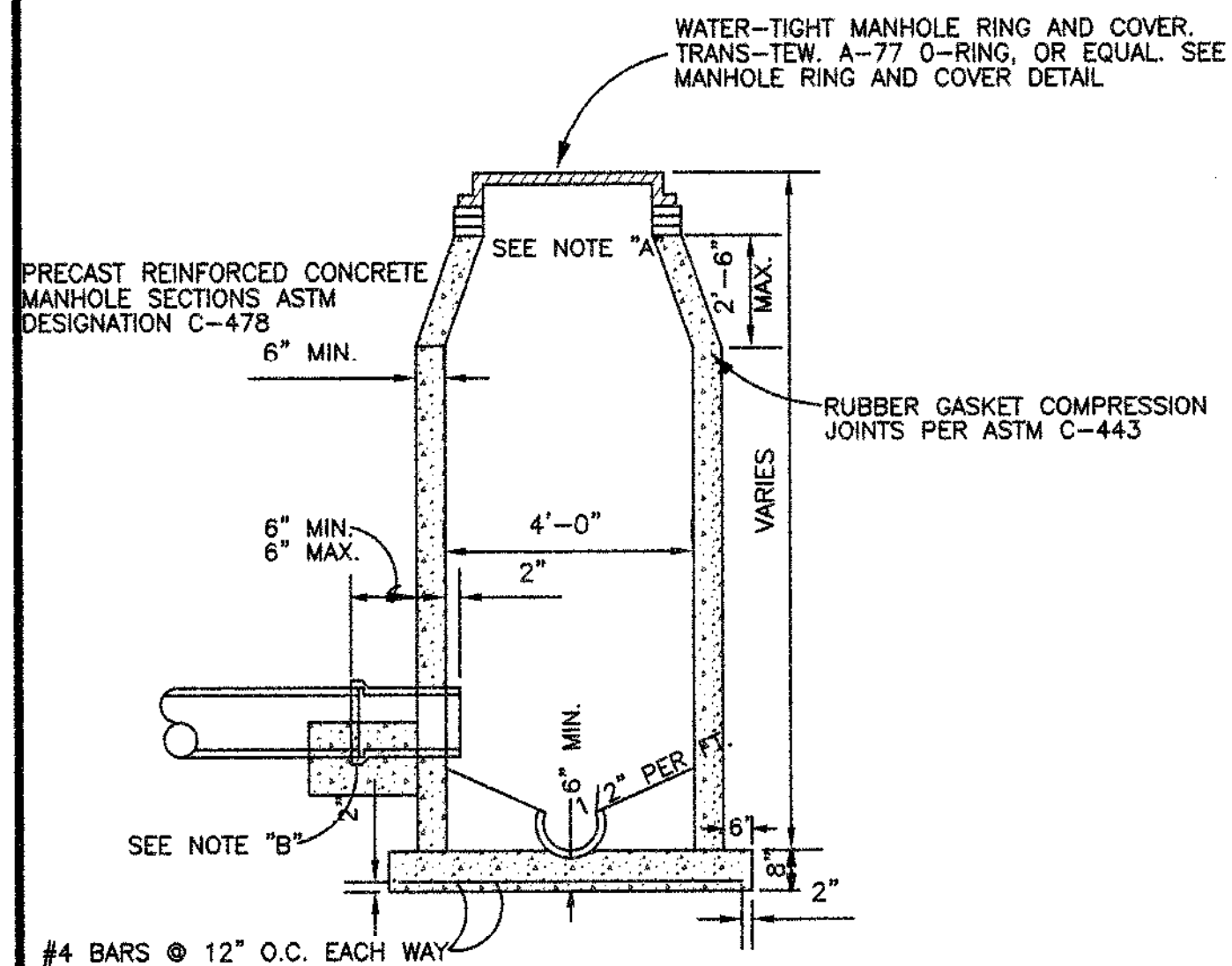
**San Antonio Design Group Inc.**  
CONSULTING ENGINEERS  
SAN ANTONIO, TEXAS 78213  
PH (210) 226-6545 FAX (210) 226-6546

CITY OF LEON VALLEY  
2012 WATER AND SANITARY SEWER PROJECTS  
FOREST GROVE SAN SEW & SS POINT REPAIR #1

J.A.S.  
DRAWN BY:  
S.A.C.  
CHECKED BY:  
S.A.C.  
APPROVED BY:  
APRIL 2012  
DATE:

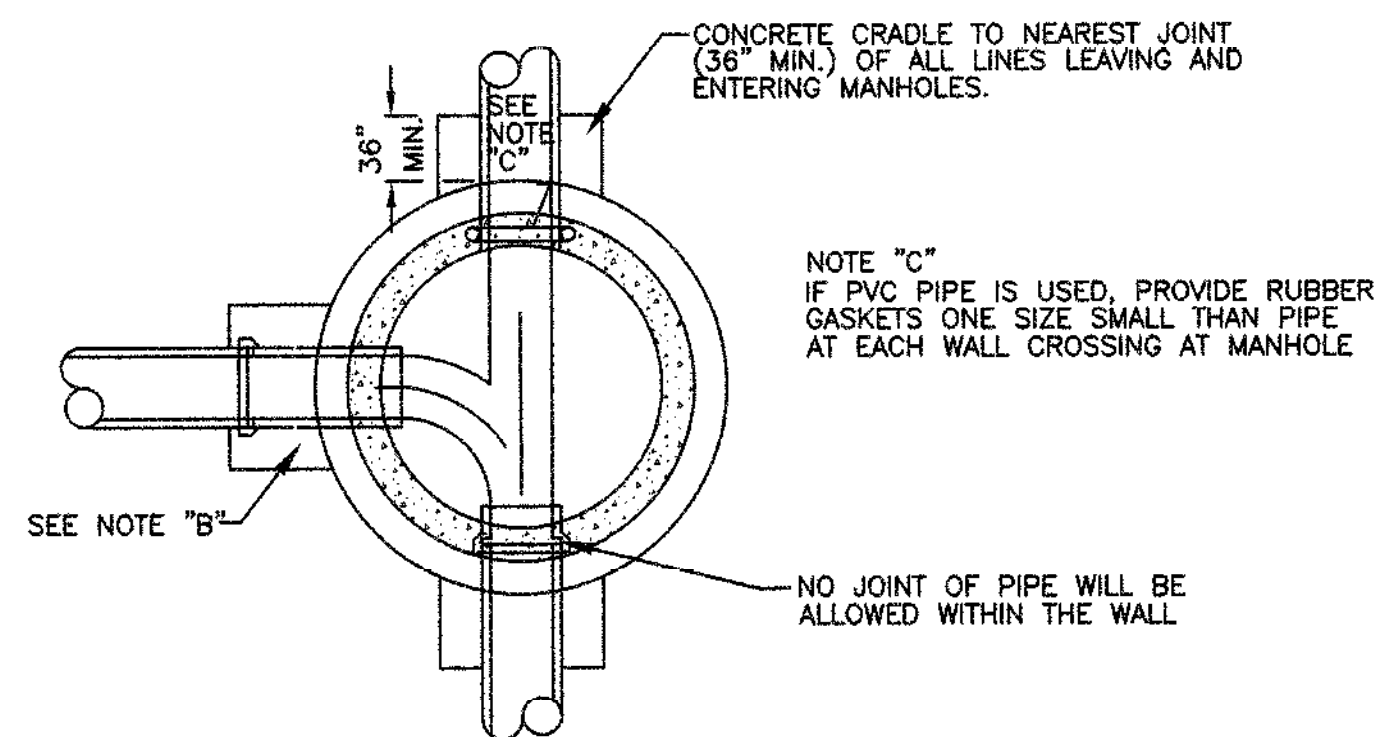
REVISIONS

SHEET: 8  
OF: 10

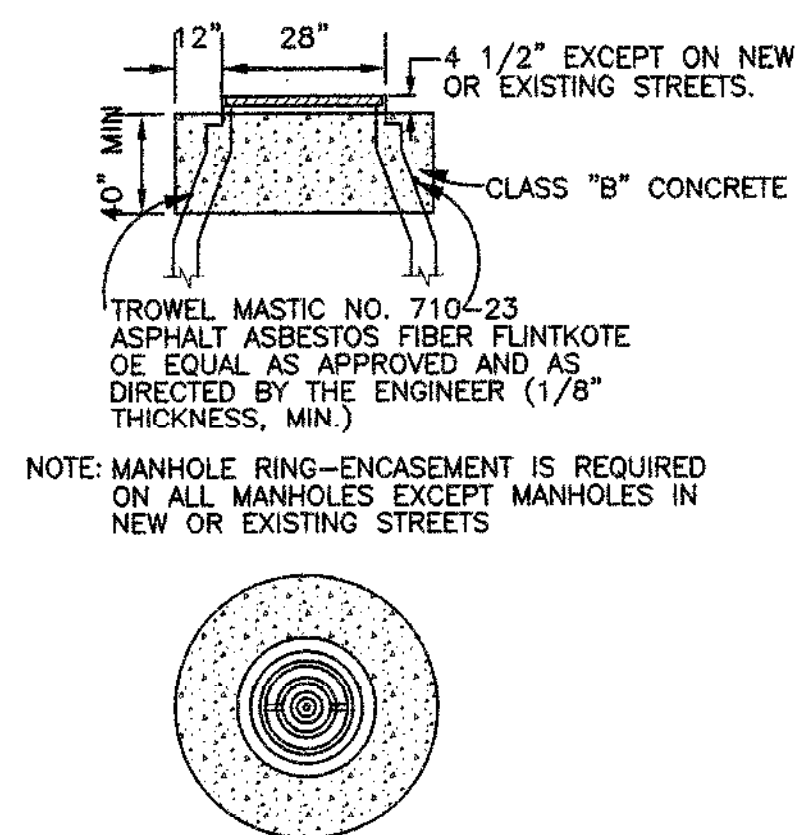


**A** PRECAST SANITARY SEWER MANHOLE  
SCALE: N.T.S.

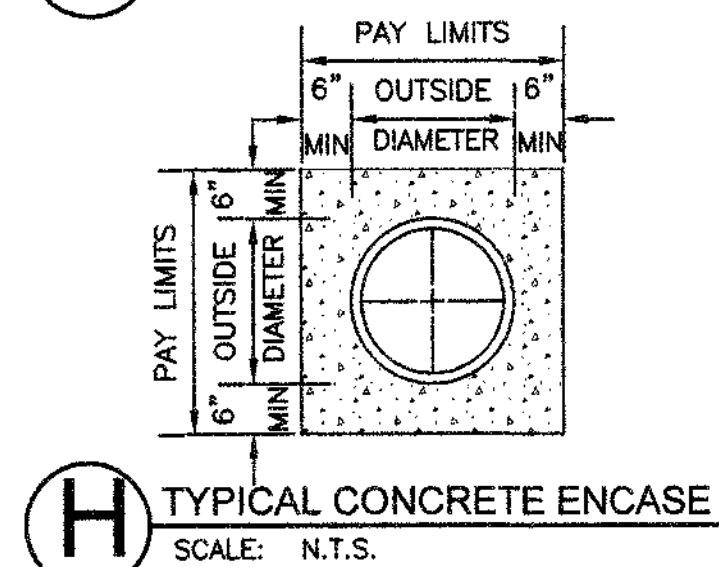
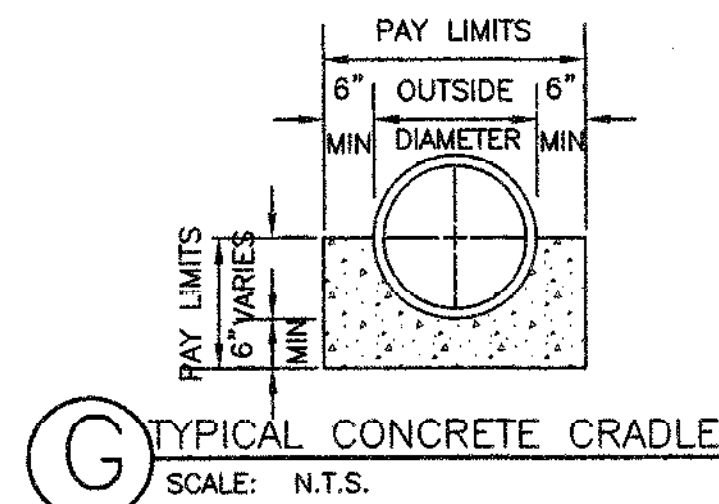
NOTE: "B"  
SEWER PIPE CONNECTING TO MANHOLES ABOVE  
THE LOWEST SEWER SHALL PROJECT TWO INCHES  
(2") FROM THE INSIDE WALL, AND INSTALLED WITH  
A JOINT A MINIMUM OF SIX INCHES (6") AND A  
MAXIMUM OF EIGHTEEN (18") FROM  
OUTSIDE MANHOLE WALL.



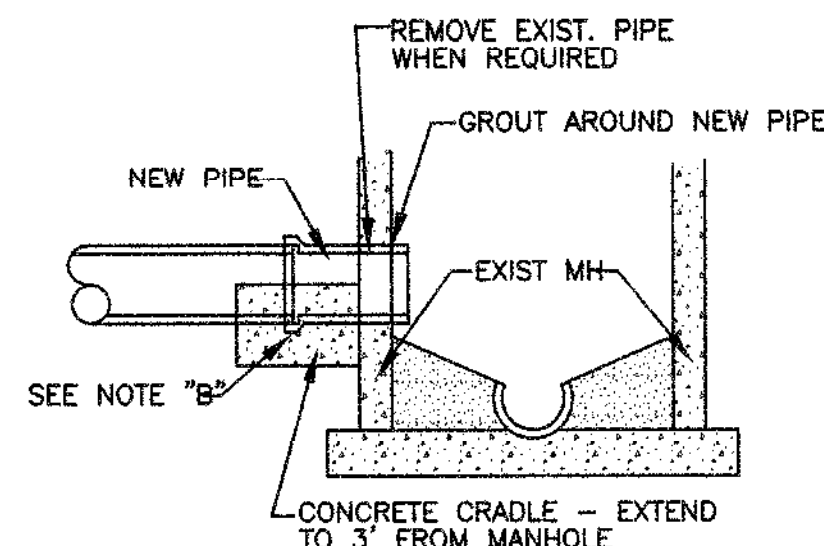
**F** MANHOLE FLOOR PLAN  
SCALE: N.T.S.



**B** MANHOLE RING ENCASEMENT DETAIL  
( ALL MANHOLES )

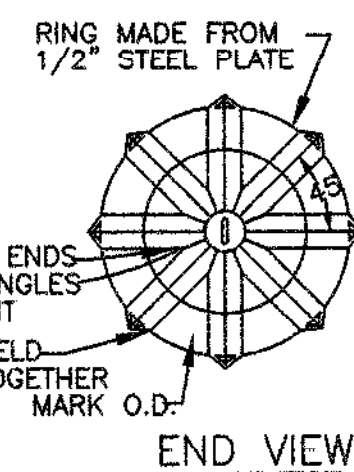


**H** TYPICAL CONCRETE ENCASE  
SCALE: N.T.S.

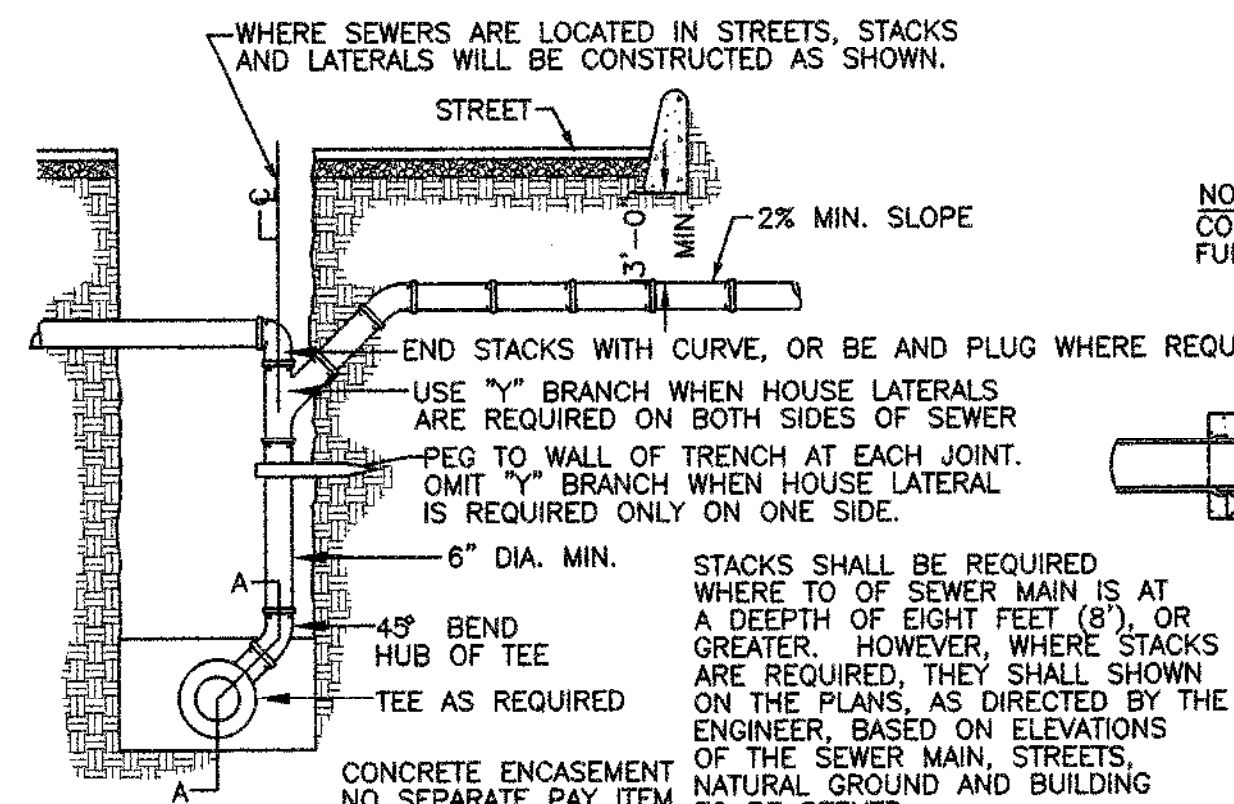


**C** CONNECT NEW PIPE TO EXIST. MANHOLE  
SCALE: N.T.S.

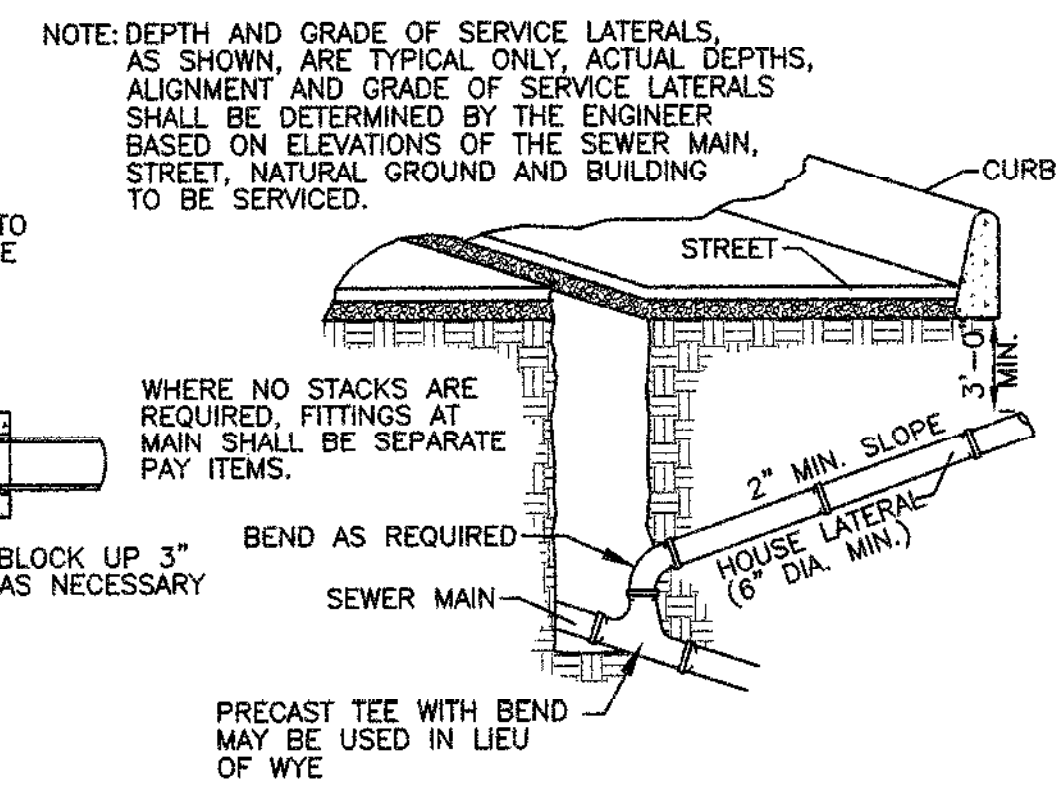
NOTE: "B"  
SEWER PIPE CONNECTING TO MANHOLES ABOVE  
THE LOWEST SEWER SHALL PROJECT TWO INCHES  
(2") FROM THE INSIDE WALL, AND INSTALLED WITH  
A JOINT A MINIMUM OF SIX INCHES (6") AND A  
MAXIMUM OF EIGHTEEN (18") FROM  
OUTSIDE MANHOLE WALL.



**I** GO/NO GO DEFLECTION TESTING MANDREL  
SCALE: N.T.S.



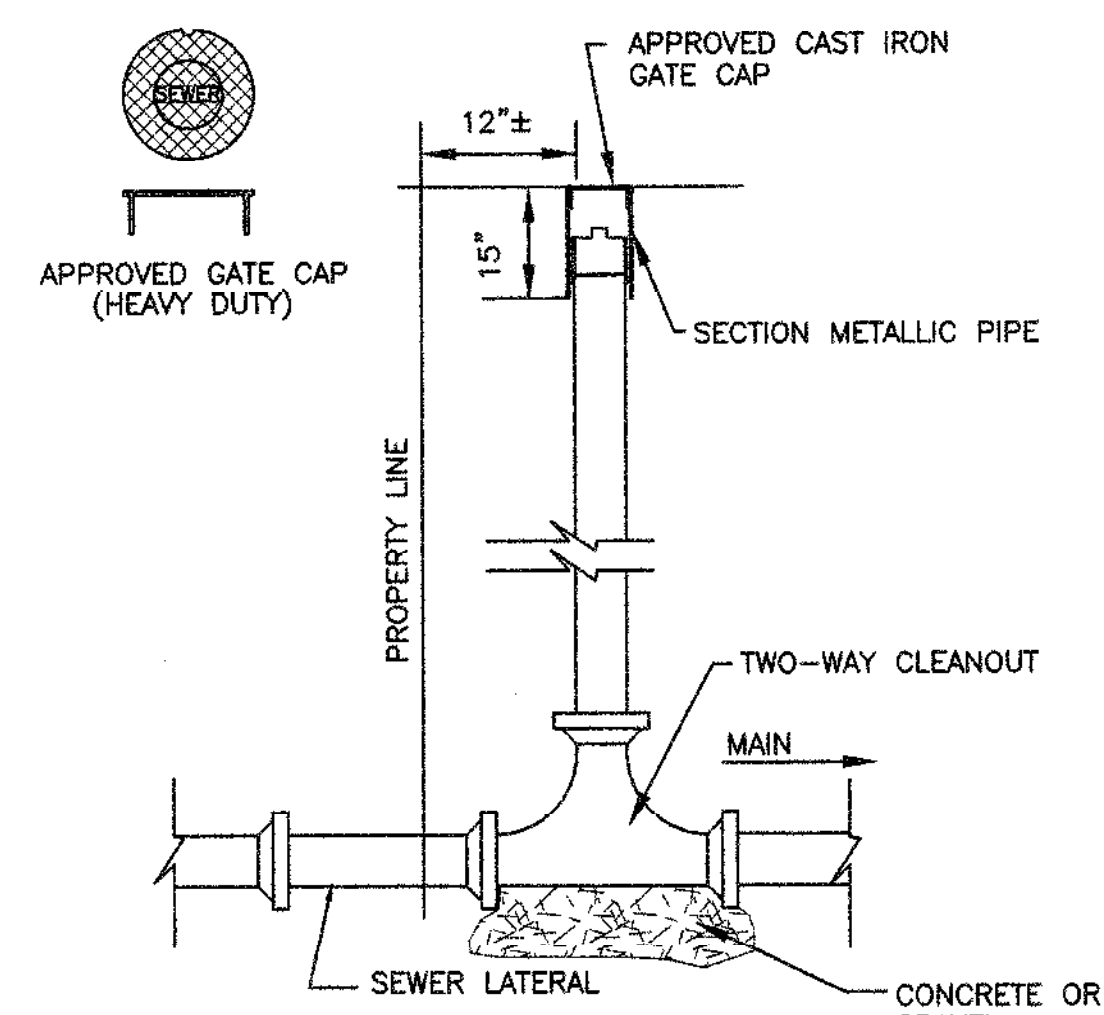
**D** TYPICAL STACK DETAIL  
SCALE: N.T.S.



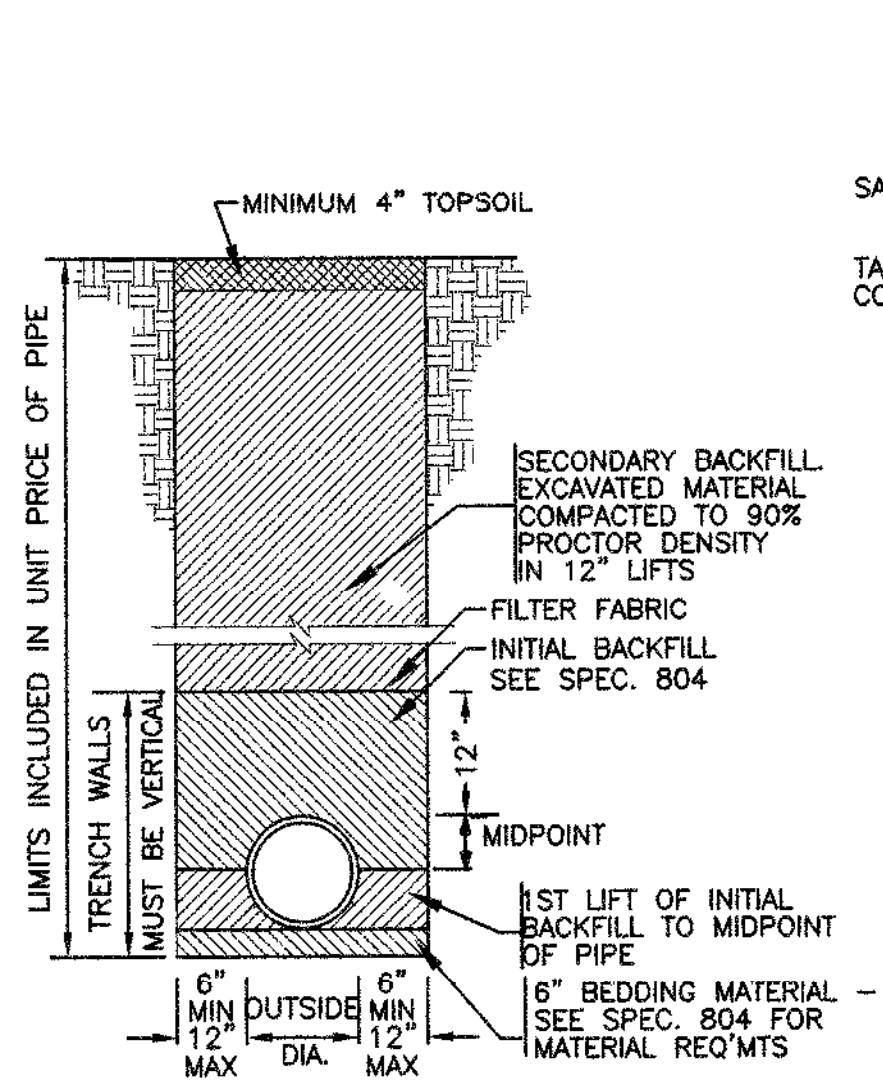
**E** HOUSE LATERAL DETAIL  
SCALE: N.T.S.

SIZE	A	B	MANDREL O. D.	PSM (SDR-26)
6"	4.0"	4"		5.43
8"	5.3"	6"		7.28
10"	6.7"	6"		9.10
12"	8.0"	8"		10.83
15"	10.0"	9"		13.26

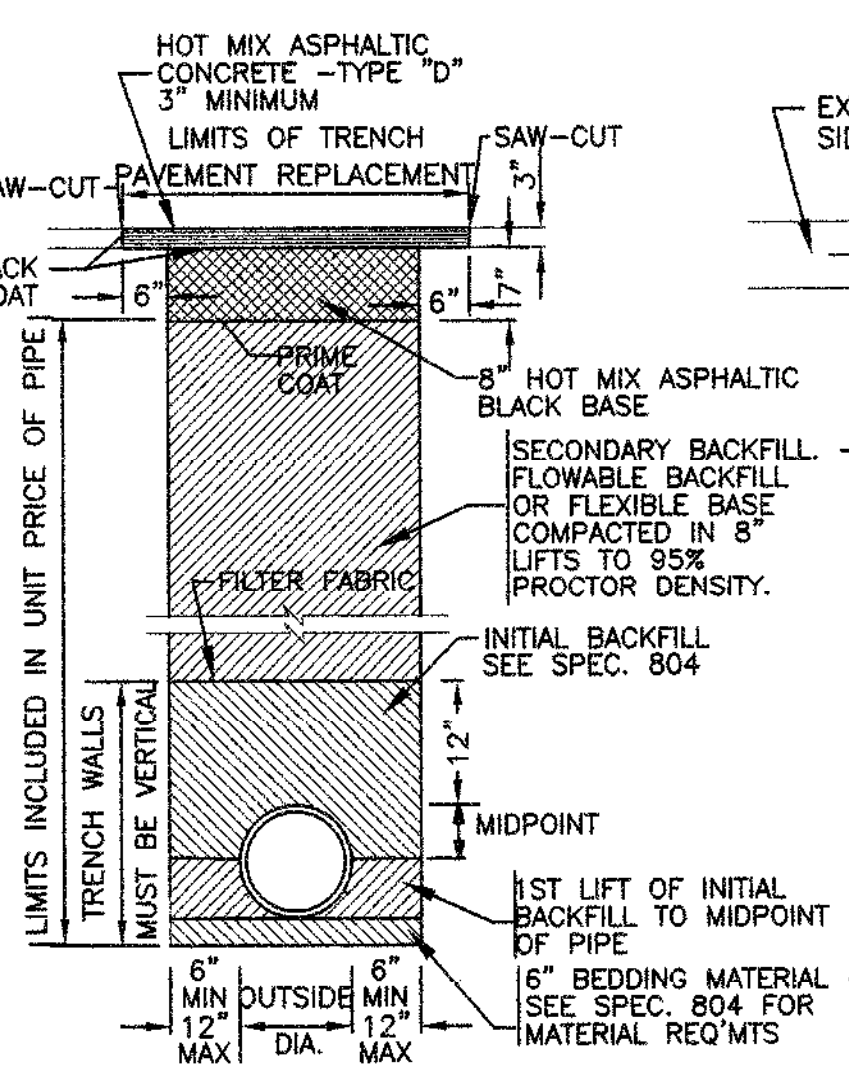
CHART



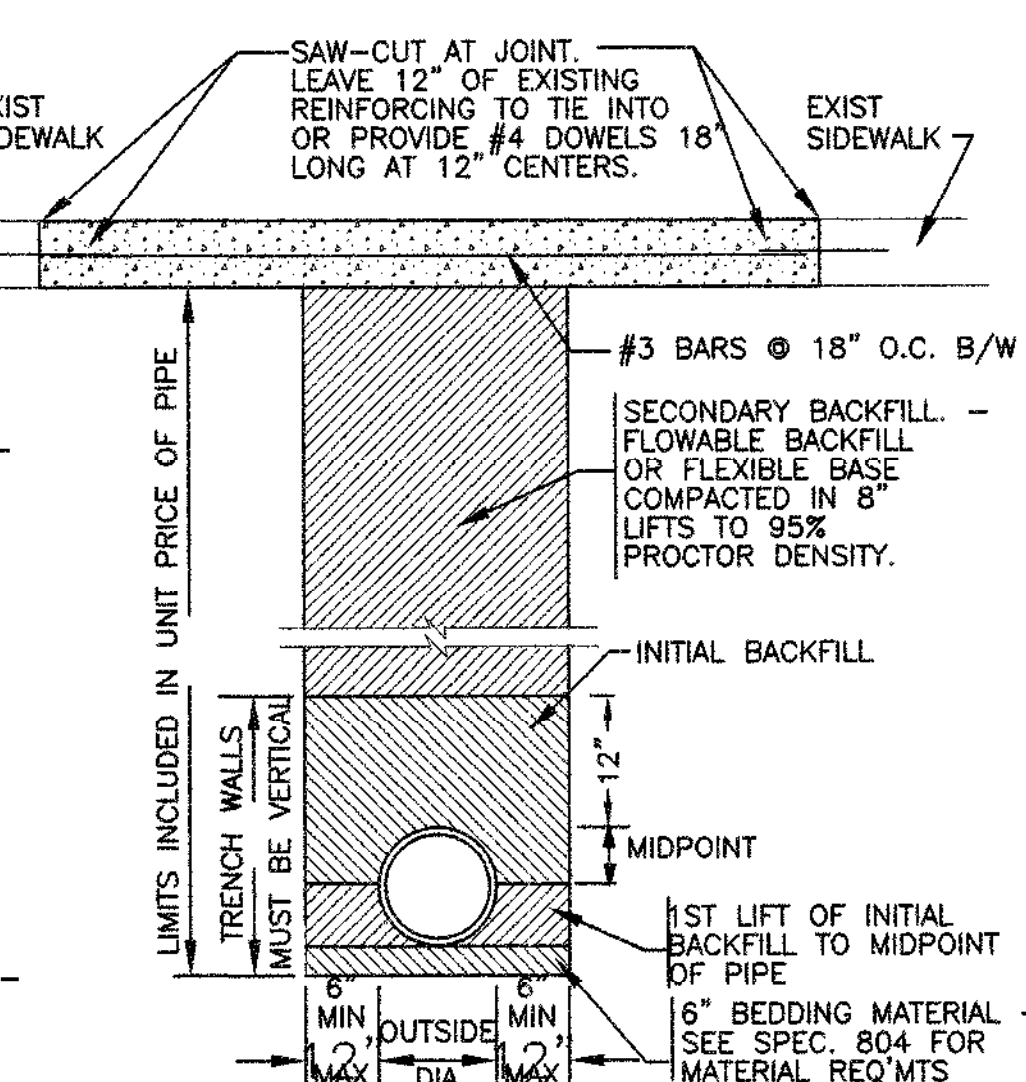
**J** TWO-WAY CLEANOUT



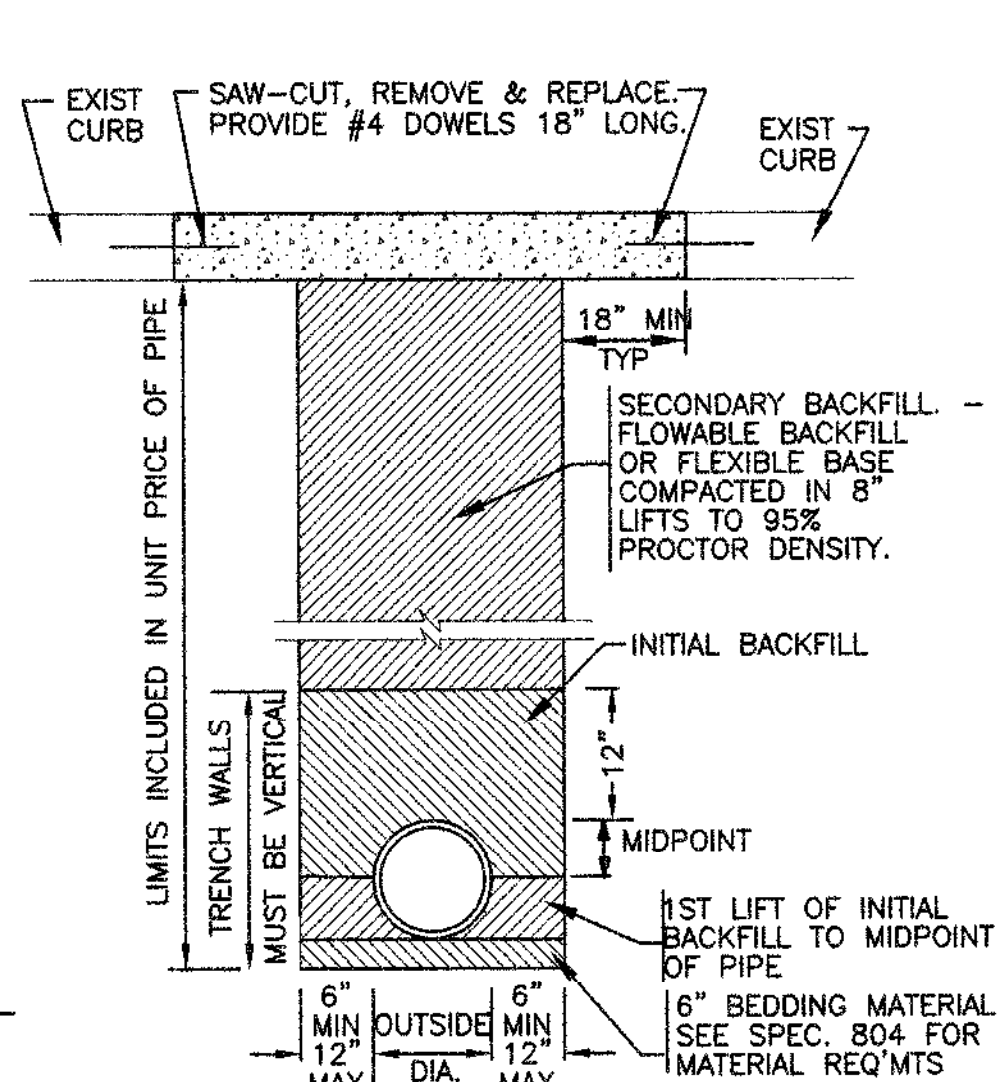
**K** TYPICAL PIPE BEDDING AND BACKFILL  
FOR AREAS WITHOUT TRAFFIC  
SCALE: N.T.S.



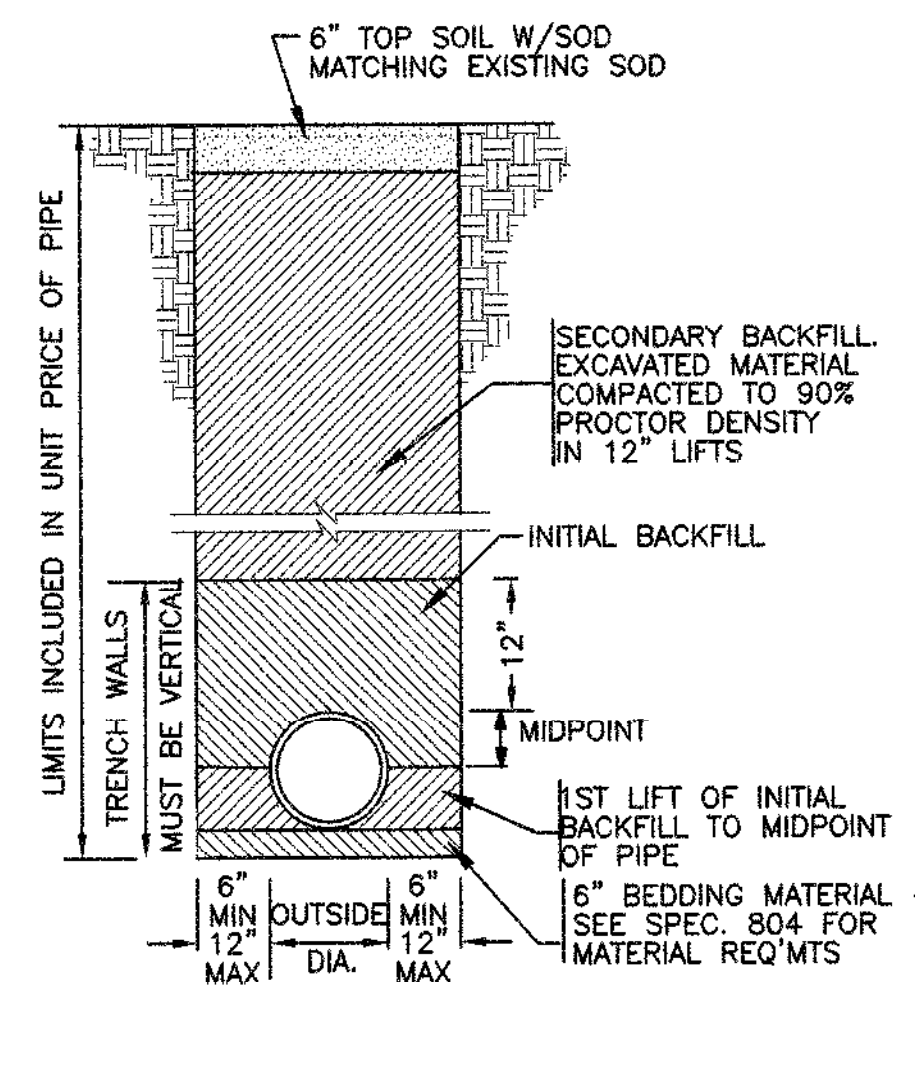
**L** TYPICAL PIPE BEDDING AND BACKFILL  
UNDER ASPHALT PAVEMENTS  
SCALE: N.T.S.



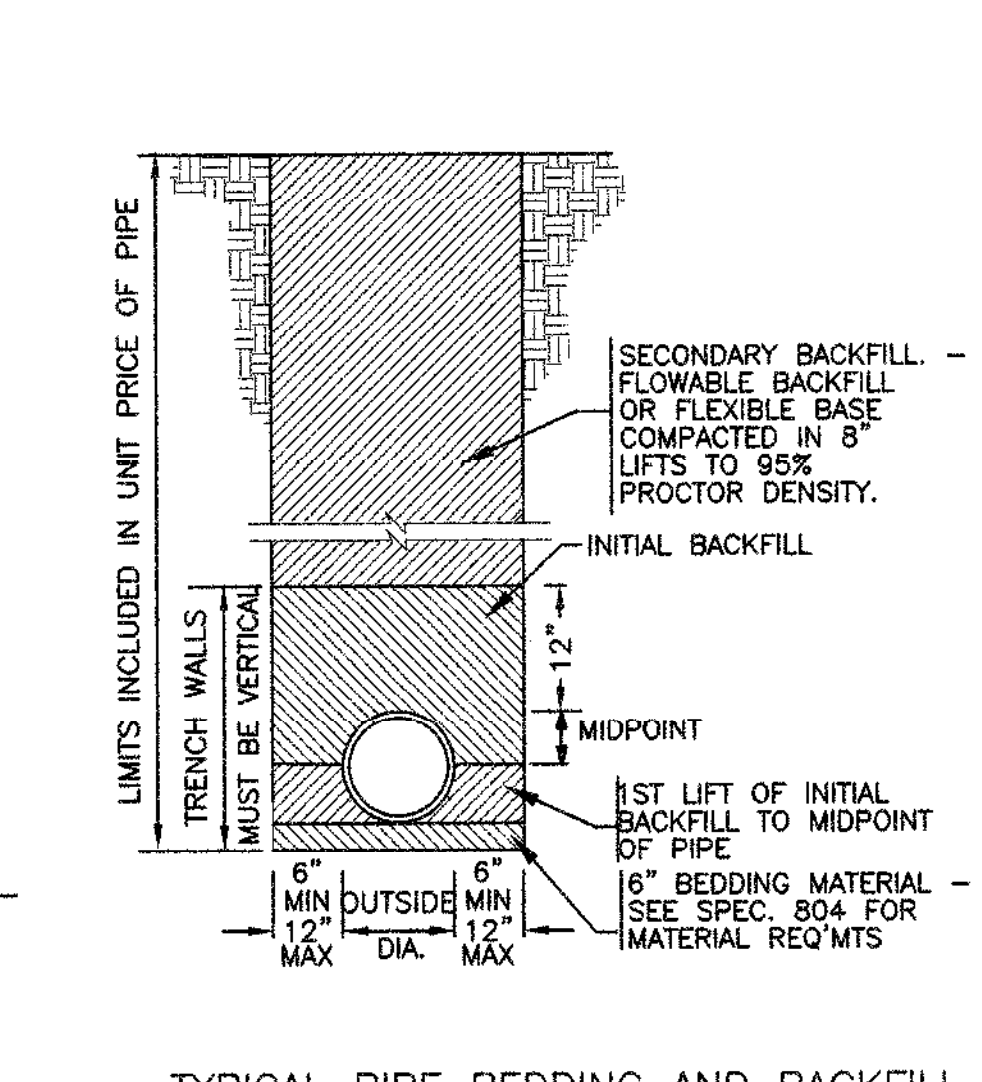
**M** SIDEWALK REPLACEMENT  
SCALE: N.T.S.



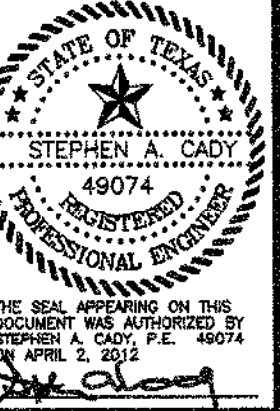
**N** CURB REPLACEMENT  
SCALE: N.T.S.



**O** TYPICAL PIPE BEDDING AND BACKFILL  
FOR GRASS AREAS  
SCALE: N.T.S.



**P** TYPICAL PIPE BEDDING AND BACKFILL  
ALLEYS & ROAD SHOULDERS  
SCALE: N.T.S.



**San Antonio**  
**Design Group Inc.**  
CONSULTING ENGINEERS  
2101 LOCKHILL SEVEN SUITE 216  
SAN ANTONIO, TEXAS 78213  
PH: (210) 226-6545 FAX: (210) 226-6546

CITY OF LEON VALLEY  
2012 WATER AND SANITARY SEWER PROJECTS  
DETAILS

J.A.S.  
DRAWN BY:  
S.A.C.  
CHECKED BY:  
S.A.C.  
APPROVED BY:  
APRIL 2012  
DATE:

REVISIONS

SHEET: **9**  
OF: **10**



NOTES:  
LENGTHS SHOWN ABOVE WERE COMPUTED BASED ON THE FOLLOWING VALUES:

A. PIPE MATERIAL - PVC	B. SAFETY FACTOR - 1.5 TO 1
C. TEST PRESSURE - 150 PSI	
D. SOIL DESIGNATION - CL, INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY. LITTLE OR NO CHANCE SOIL WILL BECOME SATURATED.	
E. DEPTH OF COVER - 4 FEET (TYPICAL AND UPPER BEND)	
	8 FEET (LOWER BEND)

### WATER SYSTEM GENERAL NOTES

1. MACHINE CHLORINATION WILL BE BY THE CONTRACTOR UNLESS OTHERWISE STATED.
2. CONTRACTOR TO DISINFECT AND HYDROSTATIC TEST MAINS IN ACCORDANCE WITH SAN ANTONIO WATER SYSTEM STANDARDS. CONTRACTOR TO CONDUCT ALL SAMPLING AND TESTING. FURNISH TEST RESULTS TO CITY BEFORE CONNECTING TO EXISTING MAIN.
3. ALL WATER LINES SHALL BE GRAVEL ENCASED, SIX-INCH (6") CUSHION TWELVE INCHES (12") ABOVE TOP OF PIPE.
4. ALL GATE VALVES SHALL BE RESILIENT SEAT LEFT OPEN, MUELLER A-2370 20 VALVES.
5. 8 MIL POLYETHYLENE WRAPPING WILL BE REQUIRED ON ALL DUCTILE IRON, CAST IRON AND FITTINGS.
6. ALL FITTINGS TO BE MECHANICAL JOINT WITH CONCRETE BLOCKING UNLESS OTHERWISE NOTED.
7. DIRECTOR OR PUBLIC WORKS OR HIS AUTHORIZED REPRESENTATIVE SHALL BE PRESENT DURING ALL SAMPLING, TESTING OR TIE-INS BY THE CONTRACTOR (NO EXCEPTIONS).
8. TRENCH SAFETY REQUIREMENTS PERTAIN TO ALL WORK.
9. ALL FITTINGS SHALL BE MECHANICAL JOINT.
10. THE CONTRACTOR SHALL PROVIDE JOINT RESTRAINTS AND THRUST BLOCKING ON ALL FITTINGS.
11. COMPLY WITH SAN ANTONIO WATER SYSTEMS ITEM NO. SPECIFICATION 3000 "SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE", WHERE THE SPECIFICATION INDICATES "SAN ANTONIO WATER SYSTEM" REPLACE WITH "CITY OF LEON VALLEY".

